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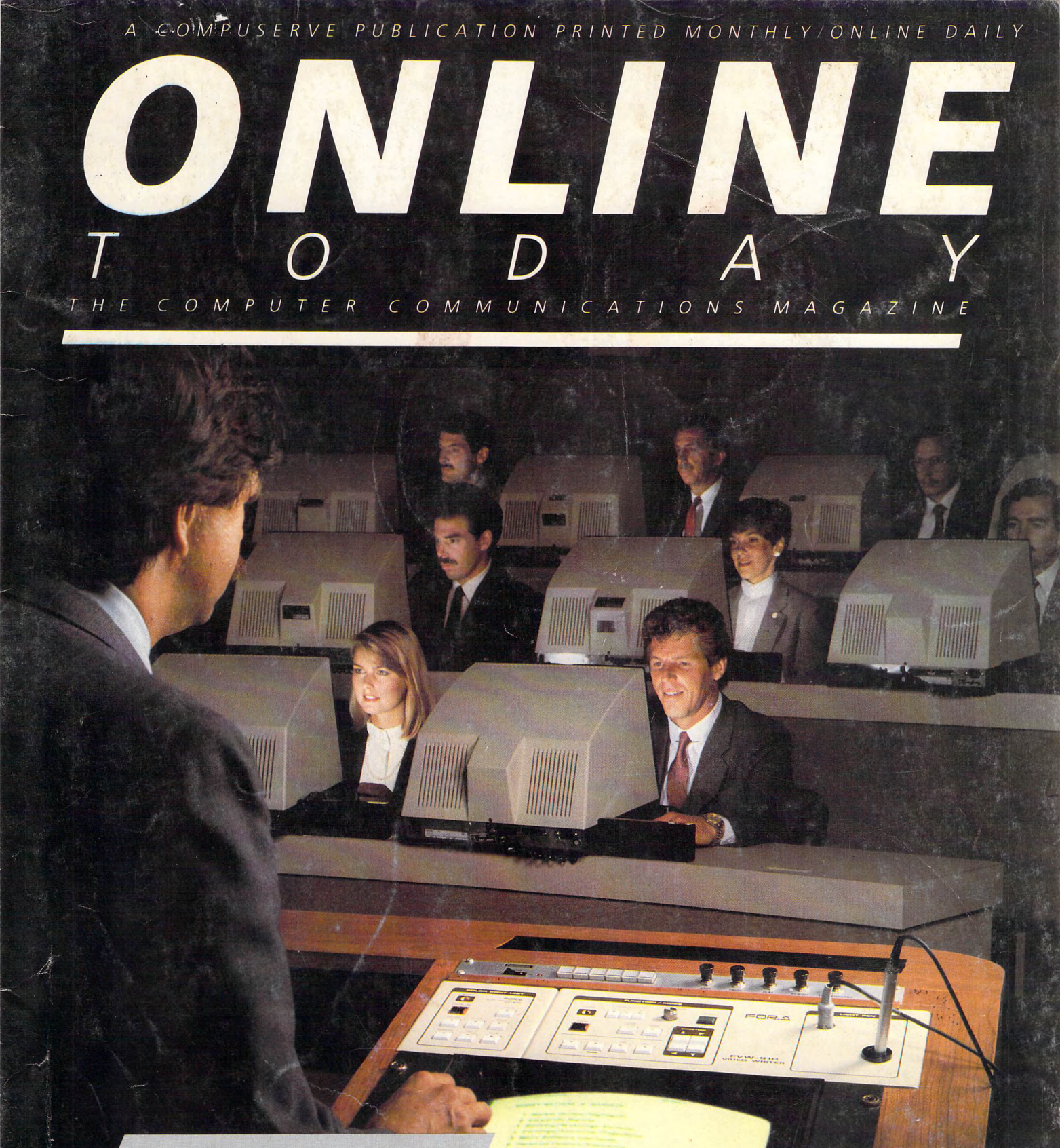
ONLINE TODAY

THE COMPUTER COMMUNICATIONS MAGAZINE



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ELECTRONIC EDITION

Online Today Electronic Edition provides daily-updated computer and information industry news, coverage of CompuServe services, commentary, computer product reviews and more. To access the Electronic Edition, type GO OLT at any CompuServe prompt.

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DEAR READER

Online Today™**, September 1985**
Volume 4 Number 9

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BPA Membership
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While it may be well into the next century before most U.S. universities devote courses to computer-mediated communication, there is an electronic evolution going on at the University of Florida, Ohio University, Ohio State, Indiana University and others.

Videotex programs at each of these institutions developed out of collegiate and industrial cooperation. For example, Ohio University's College of Communication and CompuServe have an agreement with provisions for faculty internships, videotex research projects and the creation of a comprehensive videotex curriculum. CompuServe also installed a local, 40-port node to connect OU's videotex students with the corporation's mainframes.

With the communications link to CompuServe and donations of videotex frame generators and terminals from AT&T's Educational Foundation, Paul Nelson, dean of the College of Communication, says Ohio University expects to have "the most complete hands-on program in the field." Nelson adds, "That means our graduates will be highly marketable in the fastest-growing segment of modern communications."

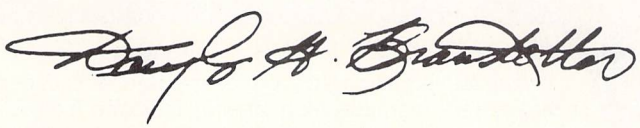
Byron Scott, the first faculty intern at CompuServe, simultaneously taught an experimental course called Writing and Editing Videotex. The course has since become a regular offering in the journalism school and now there are plans for courses in videotex graphics and database management. Scott, also a contributing editor of *Online Today*, chronicles his videotex venture and examines what other universities are doing to prepare students for careers in electronic communications in this month's cover story, "Teaching Videotex," beginning on page 12.

* * *

The business section features an article about how Wendy's International uses CompuServe's InfoPlex® electronic mail system for communications between internal and external operating divisions, facilities and vendors worldwide.

Another communication and information system, BMEDSS, links the biomedical community through InfoPlex, an online forum and a series of databases. BMEDSS users include biomedical engineers, professional association members and medical equipment manufacturers.

Investors will find useful information in the article about the Institutional Brokers' Estimate System and the updates on financial products for CompuServe's business information customers.



Douglas G. Branstetter
Editor

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Electronic Bounce Back (EBB) is *Online Today*'s electronic version of the traditional reader inquiry card. To request additional information about products or services described in *Online Today*, simply access CompuServe and GO EBB.

CompuServe Page EBB-1
ONLINE TODAY ADVERTISERS
ELECTRONIC BOUNCE BACK (EBB)
1. EBB Instructions
2. Online Today Display Ads
3. Electronic Edition Reviews
4. Print Edition Reviews
5. Shopper's Guide Classifieds

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CompuServe Page EBB-160
ONLINE TODAY ADVERTISERS/EBB
1. July 1985 Advertisers
2. June 1985 Advertisers
3. May 1985 Advertisers

Editorial Articles/Reviews

At the end of each electronic version product review, you'll be asked if you wish to request further information through the Electronic Bounce Back system. A "yes" response will let the system prompt you for your name, address and other information so that your request can be forwarded to the appropriate company. If you respond "no," the system will return you to the previous menu.

To request information about products reviewed in the print edition, go to page EBB-280 and select the appropriate listing, such as July Hardware Reviews. At the next menu, select the product you're interested in. If you answer "yes" at the question prompt, the EBB system will prompt you for the necessary information. Requests to these sections will be stored and forwarded by traditional mail once each month.

CompuServe Page EBB-280
REVIEW LISTINGS/PRINT EDITION
1. July Hardware Listings
2. July Software Listings
3. July New Product Listings

Shopper's Guide

GO EBB-70. This is *Online Today*'s classified section and is designed to enable readers to easily scan areas of interest.

To request information from Shopper's Guide advertisers send CompuServe Email or use traditional methods of communication.

CompuServe Page EBB-70
SHOPPER'S GUIDE
1. About Shopper's Guide
2. Rates and Information
3. Software
4. Services
5. Accessory
6. Retailers

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LETTERS

Wordvision Review

We appreciate the complimentary things Hardin Brothers had to say about our Wordvision® program in the June review section. We would take issue with some of his less favorable opinions, but they are a reviewer's prerogative. There is, however, one error of fact we would like to correct.

The current retail price of Wordvision is $49.95 for one copy and $29.95 per copy when 10 or more are purchased. The $79.95 price reported in your review was the price prior to that change.

Incidentally, many of the limitations Brothers objected to are overcome by the Advanced Formatting PowerPack™ for Wordvision. This add-on package ($49.95) offers footnote positioning, mixed single- and double-spacing, simple mailing list merge facilities and other features for users with complex formatting needs.

Jim Edlin, President
Bruce & James, Program Publishers Inc.
San Francisco, Calif.

Deskpro Review

Ernest E. Mau's review of the Compaq Deskpro in the June issue was excellent and accurate with the exception of the paragraph dealing with the Compaq Deskpro's speed.

As the owner of a Deskpro Model 4, I have never had to "force" my computer (or other Deskpros I have used) from the slow (4.77 MHz) speed into the fast (7.14 MHz) speed. All the Compaq Deskpros I have used boot directly to the fast or "green" speed.

James H. Rothwell
Placentia, Calif.

Software Reviews

I appreciate your excellent reviews section, both in the print and electronic editions of *Online Today*. I would like to make one suggestion regarding software reviews. It would be helpful to me, and to other users, if you included in the review summary at the start of each review another bit of information: whether or not the software comes on protected media.

I personally consider copy protection an insult to my integrity, and I try to avoid buying such software whenever possible. A line stating "copy protected" or "not copy protected" would help me make a decision whether to purchase a particular software package or not.

R. B. Reyes
Dallas, Texas

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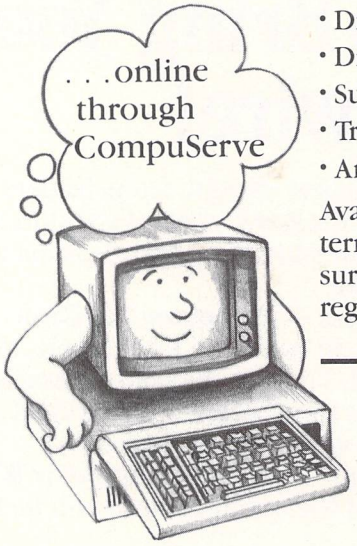

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LETTERS

New Design of *Online Today*

The new look is great. The magazine has good graphics and great all-around changes. The only thing I'd say could improve the magazine now is to put the new Highlights section as a pull-out insert in the center.

Nice work. I look forward to each issue.

Walter O'Brien, President
Concrete Management Inc.
New York, N.Y.

Software Piracy

I've heard numerous views on the topic of software piracy and until now have not entered the debate. However, after reading Steve Standish's letter (July issue), I have a comment.

Is he saying he needs an actual list of people who have lost their businesses to understand the damage it does? Does someone need to be bankrupt to be considered hurt? Shoplifting probably doesn't drive many companies out of business either, but it is morally and legally wrong.

Software can cost from less than $30 to $1,000 or more. Is stealing $1,000 worth of merchandise from a department store not damaging to the store simply because it stays in business? It makes up for the shoplifting by raising its prices. Of course, if software companies do that, there will be more pirates whining about the high price of software.

Finally, comparing software copying to record copying is ludicrous. How many software packages can Standish get for less than $10? Bootlegging tapes is morally and legally wrong. Isn't that enough?

Randy Schirmer
Chadds Ford, Pa.

Please address your letters to the editor through Online Today's Electronic Edition *Feedback area. Simply enter GO OLT-33 from any prompt in the CompuServe Consumer Information Service, or write to: Letters to the Editor,* Online Today *magazine, 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, OH 43220.* Online Today *reserves the right to edit letters for length, content and clarity.*

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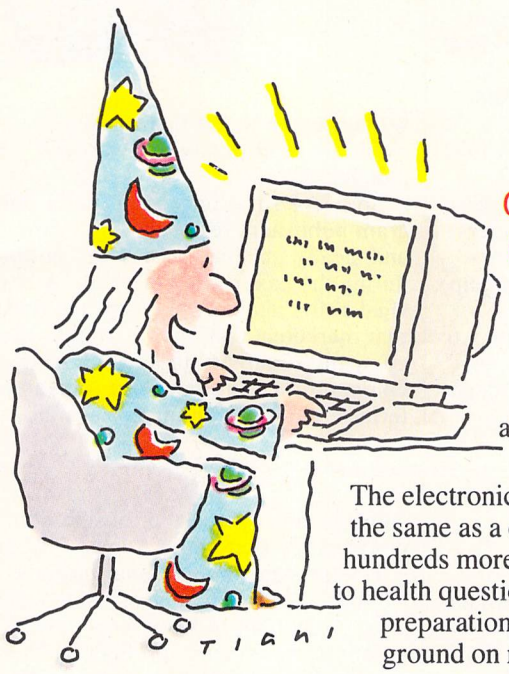

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The Hammer Falls on Software Arts

King Associates

It was a bittersweet day last June when the remaining assets of Software Arts Inc., creators of the now legendary VisiCalc electronic spreadsheet program, hit the auction block.

While Software Arts met a somewhat happier fate than most early personal computer software publishers (it was swallowed up by software giant Lotus Development Corp. earlier this year), company founder Dan Bricklin watched wistfully as the auctioneer gaveled away the firm's physical assets. Standing under threatening spring skies, wearing a Software Arts T-shirt, Bricklin remarked, "We had something different here — a unique, friendly company that pioneered something important in the computer business. I feel kind of sad. It's like getting rid of the puppies."

The first item auctioned off was a 1982 van bearing the license plate "SAI VAN." It sold for $5,750. The van was followed by a succession of computers, printers, disk drives, disk duplicators, potted plants, furniture and office equipment.

Neither Lotus or the Joseph Finn Co. of Boston, the auctioneer, would comment on how much revenue was brought in by the sales, but a Lotus spokesperson noted that the funds would be used to pay Software Art's remaining debts.

Software Arts, once the king of program publishers, experienced a slow and steady decline in sales and profits during the past couple of years. A bitter legal battle against VisiCorp, the firm that marketed VisiCalc, as well as the company's inability to keep pace with competitors' more powerful software offerings, led to its ultimate downfall.

Electronic Shutterbugs

An isolated farm in Osceola, Wis., has been transformed into an electronic workplace by photographer Rohn Engh and Jeri Engh, a professional writer.

Using their computers and modems, the Enghs write and market an electronic newsletter that links photographers around the country with photo assignments from magazine and book editors. Subscriptions to the weekly *PhotoBulletin* are $35 a month and are received by MCI Mail, either electronically or in the home mailbox. Editors may list assignments at no charge.

The newsletter is transmitted Thursday evenings and contains photographic assignments in the areas of travel, industry, film, science, education, natural sciences and family living for such publications as *National Geographic*, *World Book Encyclopedia* and *Woman's World Magazine*.

PhotoBulletin debuted on NewsNet, an electronic database of business-oriented newsletters, in August 1982 and is now serving an additional purpose. "Public relations and advertising executives often want to know how photographs of a particular product, such as jogging shoes, have been used in the past. The database of information that is now available from our newsletter on NewsNet will give them their answer," says Rohn.

In addition to availability on NewsNet and MCI Mail, Mutual Broadcasting is test-marketing transmission of *PhotoBulletin* via FM Sub-Carrier in the Washington, D.C., area.

He readily admits that not all photographers have computers — or are even interested in them — which is why MCI Mail home delivery is offered as an option. A sample copy of *PhotoBulletin* is available on the TRS-80 Professional Forum (GO PCS-21) in Data Library 1. For information or a subscription, call the Enghs at 800/525-9840.

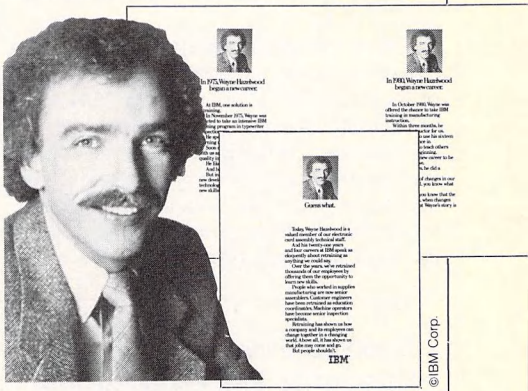
— Cathryn Conroy

The Name Behind the Face

You may not recognize Wayne Hazelwood's name, but chances are you've seen his face.

Hazelwood is the man whose face has appeared in IBM ads in *Time*, *Business Week*, *Newsweek*, the *New York Times* and dozens of other publications. He's the fellow who IBM says it had to retrain four times to keep abreast of changing technology. "Retraining has shown us how a company and its employees can change together in a changing world," as the ad puts it.

The 38-year-old Hazelwood has worked for Big Blue since graduating from high school. He was selected to appear in the ad by IBM's ad agency after his plant manager asked him to volunteer for the job. The resulting four-page IBM ad follows his career from typewriter assembler to his current job as an electronic card technician at IBM's Lexington, Ky., facility.


In 1973, Wayne Hazelwood began a new career.
In October 1981, Wayne was offered the chance to take IBM training in manufacturing.
Guess what.
IBM
©IBM Corp.

Hazelwood says he is adjusting well to his newly arrived celebrity status and that the highlight of his advertising odyssey was his first visit to New York. "They treated me like a real celebrity up there. It was quite a kick."

But notoriety also has its drawbacks. Hazelwood's office now boasts a telephone answering machine that allows IBM's public relations staff to return calls from reporters and other media representatives. Hazelwood has also taken some ribbing from his fellow workers.

"A while back some of the guys pasted a picture of Charlie Chaplin on the wall and asked me if I was after his job next," he says. "Of course, I'm not after anyone's job. I'm just happy doing what I'm doing. At least until I have to retrain again."

— John Edwards

Remote Work

"Remote Work Payoffs, Prospects and Opportunities" is the subject of an upcoming national conference that examines the growing interest in telecommuting programs for professionals, entrepreneurs who work from their homes via computer/phone interfaces, as well as corporations that are establishing remote work programs for their employees.

Sponsored by TeleSpan Publishing Corp., the conference will be held Nov. 4-7 in Washington, D.C. "The boundary between home and work that has been building up since the Industrial Revolution is starting to break down," says Elliot Gold, president of Telespan. "More and more people are working at home or in their own businesses as telecommuters."

The conference is being directed by Gil Gordon, editor of *Telecommuting Review: The Gordon Report*. Other participating groups are the Association of Electronic Cottagers (founded by CompuServe Working from Home Forum Administrators Paul and Sarah Edwards), the National Association for the Cottage Industry and the National Alliance of Home-based Businesswomen.

Says Gold, "The public policies and regulations are lagging far behind the times. When our legislators wrote the tax, zoning and labor laws, they didn't count on the rapid spread of personal computers and the incredible level of interest in working at home for yourself or as an employee."

For information on the "Remote Work" conference, contact Gil Gordon, Gil Gordon Associates, 10 Donner Ct., Monmouth Junction, NJ 08852; 201/329-2266.

New York Ponders Computer Consumer Legislation

New York State Sen. Tarky Lombardi, R-Syracuse, has introduced legislation that would require all new personal computers sold in New York State to carry a minimum one-year warranty against defects in parts, materials and workmanship. The bill, SB5091, covers computers sold for family and home use, but excludes units sold to businesses.

"The measure will end the era of the unreasonable 90-day warranty," says Chris Riley, an aide to Lombardi. "It will protect the consumer who spends thousands of dollars on computer equipment only to get burned with a huge repair bill four months after purchase." The senator feels that businesses are capable of looking out for themselves, but that "government has an obligation to protect the little guy."

Riley notes that the legislation must pass several hurdles — including approval in the Senate and Assembly and the signature of Gov. Mario Cuomo — before it can take effect on Jan. 1, 1986. Currently, the bill is being evaluated by the New York State Senate Committee on Consumer Protection.

Leading the opposition is computer giant IBM, which is based in Armonk, N.Y. "IBM has told us that the bill could significantly raise its cost of doing business in New York," says Riley. "We've gone over the bill with their government affairs representative, and he doesn't like it one bit. He feels IBM could get stuck providing warranty service on machines sold by gray market dealers. But the senator thinks it's up to IBM to police its own dealer network."

When contacted by Monitor, an IBM spokesman declined to comment on the matter.

Personal Computers in Business

The number of businesses using personal computers has grown by six-fold within the last two years, more than double the rate originally projected by computer market research firms, notes a recent Dun & Bradstreet survey.

According to the report, which looked at 5,000 randomly selected firms, companies of all sizes have increased their PC use. The biggest jump was among businesses with 500 to 999 employees; 71.8 percent of this group now uses computers compared to 44.5 percent in 1983. Computer use in companies with 100 to 499 workers rose to 47.2 percent from 27.3 percent. America's biggest computer users are also the nation's largest companies. Out of firms with more than 1,000 employees, 85.4 percent use personal computers (compared to 65.7 percent two years ago).

IBM is the favorite business micro, notes the report. Three out of four businesses using personal computers own an IBM system. Ninety percent of the firms that said they were looking to purchase a first microcomputer this year said they would buy Big Blue. In second place is Apple Computer, which has machines in 8.7 micro-equipped offices. Of those in the market for a first computer, 27 percent said they would select Apple.

— John Edwards

The Old College Try

Colleges have a mission: to prepare the leaders of tomorrow by educating them with pertinent facts from the past, as well as with predictions of the future. Ashland College, a small, liberal arts school in rural northern Ohio, is taking on the future with gusto.

Last spring Ashland initiated a course in accessing database information sources. Students receive hands-on experience by roaming the electronic hallways of CompuServe.

The class, taught by Dr. James Lifer, chairman of the department of teacher education, is aimed at certified teachers and education majors. Lifer, who could almost be called an information utility missionary, believes that by educating teachers he is reaching a much wider audience, since those teachers in turn share their electronic knowledge and experiences with the children they teach every day.

But the chain doesn't end there. "Once those kids become fascinated with it, they will take it into their homes and to their parents." He believes that the personal computer is a necessary learning tool of the 21st century and, therefore, must be a core part of a teacher curriculum in the 1980s.

"In the near future, we will see computer technology providing greater services in home education, daily living tasks and personal business affairs, which will permit more leisure time for recreation and relaxation," Lifer continues. "The future will include opportunities for adults to complete a portion of their workload while at home."

"Children also will be able to complete portions of their school requirements online from personal computers at home, and the task of purchasing most items for living will be available from electronic shopping malls. Telecommunications will provide a new avenue for advanced learning by children."

— Cathryn Conroy

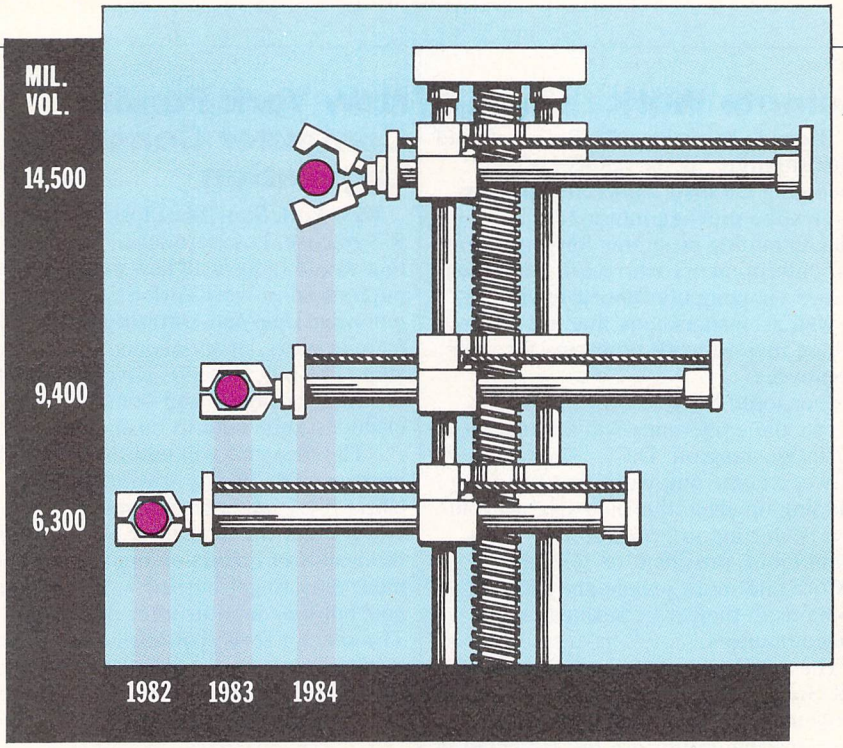
Robots Skyrocket

Robots are on the move. Figures recently released by the Robot Industries Association show that robot sales for 1984 reached an all-time high, rising 71 percent from 1983 sales.

The report notes that in 1984 American robot companies had combined sales of $332.5 million, up from $194.4 million in 1983. In addition, the industry's order backlog was up to $427.3 million at the beginning of this year, from $305.4 million at the end of 1983.

While these impressive figures constitute what Walter K. Weisel, president of the association, calls "very healthy growth," they are lower than what many analysts predicted. Despite the industry's apparent health, robot companies and the robot divisions of larger companies, have, on the whole, remained unprofitable.

Weisel maintains that high start-up costs are the main reason why so few companies show a profit. But, he notes, "The association is predicting that more companies will show a profit this year than did in the past couple of years."



The association's study found that at the end of 1984 there were 14,500 robots in operation in this country, up from 9,400 at the end of 1983 and 6,300 in 1982. The majority are fixed into position and perform monotonous tasks, such as carrying materials, welding metal and painting. The auto industry is by far the single largest user of robots.

Assorted Bits

Chemical Bank, Bank of America, AT&T and Time Inc. announced a joint information service venture. *The Wall Street Journal* reports that the project will initially be offered to the 38,500 subscribers who currently use Chemical Bank's Pronto and Bank of America's Home Banking Service. The Journal states that the system, which is expected to be marketed through financial institutions, will provide home banking, discount stock brokerage, catalog shopping, financial management and electronic mail.

Sir Clive Sinclair, inventor and millionaire owner of Sinclair Research, has quit his chief executive post to make way for a 10 million to 15 million pound cash infusion to his stricken firm. Sinclair's resignation was apparently forced by his firm's creditors.

National Semiconductor Corp. announced it's postponing plans to produce a new generation of memory chips because it feels the devices can't be profitable. The *New York Times* reported that the company will decide later this year whether it will begin production of the 256K RAM chips or abandon the project entirely.

Apple Computer has reached an agreement to sell personal computers to China. According to the *New York Times*, the computers would be distributed by Singapore company ACI Kaihin Company Ltd. According to Apple, the agreement calls for ACI Kaihin to develop software for the Apple computer and for Apple to assist in developing uses for computers in China's educational system.

The Association of Data Processing Service Organizations has announced that an out-of-court settlement has been reached in the suit filed by Micropro International Corp. and the association against the Wilson Jones Co. The suit, filed last January in federal court, charged that Wilson Jones had illegally copied word processing and related software products made by Micropro. ADPSO, a software industry group, later joined in the suit in an effort to promote its battle against software piracy. According to a joint statement issued by the three parties, the settlement requires Wilson Jones, a unit of the American Brands Co., to pay an undisclosed amount to both Micropro and ADPSO.

Hewlett-Packard Co. officials have told securities analysts that the company has now has assembled more than 100 prototypes of its next-generation computer system, the "Spectrum project." The executives said they expect a "major announcement" near the end of the year. H-P Vice President John L. Doyle said Spectrum is based on reduced instruction set architecture. According to a company statement, the technology is "expected to provide significant speed and efficiency gains, compared with conventional machines, by implementing in hardware (rather than software) their most-often used instructions."

Digital Equipment Corp. has unveiled a desktop version of its powerful VAX minicomputer. The product costs between $20,000 and $45,000, about a fifth of the VAX 780 on which it's based.

Lotus Development Corp. has celebrated the production of its one millionth software package. The program, a copy of Lotus 1-2-3, was presented last May to Massachusetts Gov. Michael S. Dukakis, who called the Cambridge, Mass., based company "truly the leading software producer."

— John Edwards

Computers a la Disney

In the past, Monitor has alerted you to computer exhibits in Washington at the Smithsonian Institution, and Boston at the Boston Computer Museum. Now, we've discovered another attraction to add to our high-tech travel itinerary.

Walt Disney World's Epcot Center in Orlando, Fla., has an attraction titled *Backstage Magic* that takes guests on an animated journey through the history of computers, from cavemen solving a mathematical problem to a representation of the world's first electronic computer to the systems of today. The hosts for the journey are computer operator "Julie" and her graphic sidekick "I/O."

The second part of the exhibit shows visitors the role computers play in the day-to-day operation of Walt Disney World. Here, visitors get to see the systems that run the park's physical plant, handle guest reservations and control the lifelike "Audio-Animatronic" robots. A Disney spokesman tells Monitor that the attraction is "geared to appeal to visitors of all ages and all levels of computer understanding."

©Walt Disney Productions

Julie, hostess for "Backstage Magic," atop one of the computer consoles at Communicore.

Backstage Magic is sponsored by Sperry and is located in Epcot's "Communicore East" pavilion. You can obtain additional information by visiting CompuServe's Florida Forum (enter GO HOM-27).

— John Edwards

They're in the Money

So you're 30 and making more money than your dad did by the time he was 50. Big deal.

You want to make money? Big money? Then you should either launch your own computer company or join an existing firm as its board chairman, chief executive officer or president. You don't even have to work for a particularly successful computer company — just one that pays its boss big bucks.

For example, the highest paid computer executive in 1984 was Apple Computer President and CEO John Sculley, who grossed a cool $2,164,068. Board Chairman Steve Jobs, the guy who hired Sculley, was paid a relatively paltry $338,931. But, then, Jobs has a lot of equity in Apple stock (or at least he *had* a lot of equity until Apple shares nose-dived during 1985).

Big Blue's chairman takes a distant second spot on the money hit parade. John R. Opel grabbed a neat $1,034,390. Following Opel is AT&T CEO Charles Brown, who had a salary of $989,500. With money like that, you know that Brown doesn't have to shop around for *his* long distance service.

Other noteworthy salaries: Hewlett-Packard CEO John A. Young, $798,210; Digital Equipment Corp. President Kenneth H. Olsen, $655,000; Texas Instruments CEO J. Fred Bucy, $561,680; Tandy CEO John Roach, $552,490; Texas Instruments Chairman Mark Shepherd Jr., $550,020; and Data General President Edson de Castro, $436,300.

— John Edwards

Room Service

Businesses in the lodging industry now have their own online service. The AZtex Hotel Information System, operated by TeleLink Inc. of Chantilly, Va., offers daily hotel industry news, an electronic convention calendar, electronic mail and other hotel-oriented services. Users can also order a variety of supplies and services online.

According to John Sullivan, AZtex's vice president, the system's subscribers currently include such major chains as Marriott, Best Western, Ramada Inn, TraveLodge and Loew's Hotels. But the system also serves businesses that support the lodging industry.

"Many of our users are in the hotel allied industries, associations and hotel administration schools, because their effectiveness depends on staying one jump ahead," says Sullivan. "Network subscribers find a great deal of practical information in our marketing library, which includes news from associations, industry statistics, media editorial calendar and rates and world currency rates."

Sullivan notes that the average AZtex user spends more than two hours a month on the system. AZtex charges a 40-cents-per-minute connect charge with no subscription fee.

Electronic Help for Bladder Control

An electronic device that provides bladder control for the 2.5 million Americans who experience urinary incontinence due to an accident or physical disorder has been developed by a San Francisco physician.

The bladder "pacemaker," which consists of a set of electrodes that are implanted inside the patient and a handheld control box, reactivates damaged nerves that control the bladder. The system, which is microprocessor-controlled, has been developed by Dr. Emil Tanagho, chairman of the urology department at the University of California at San Francisco.

"It's a great step forward," says Dr. Tanagho. "Urinary incontinence is a serious physical disability. It can also leave psychological scars on its victims. By returning bladder control to patients, we feel we have taken a revolutionary step in the management of this problem." Tanagho says the pacemaker has been successfully tested in nine people so far. He's now working on expanding the tests nationwide and hopes to implant the device in up to 50 people during the next two years.

— John Edwards

PSSST!

Get behind the scenes with Monitor's "Behind the Screens" section on the *Electronic Edition* of *Online Today*. Find out what's *really* going on. GO OLT from any prompt in CompuServe and select "Monitor Daily News" from the main menu.

ONLINE TODAY
ELECTRONIC EDITION

TEACHING VIDEOTEX

UNIVERSITIES EDUCATE TOMORROW'S TELECOMPUTING PROFESSIONALS

by Byron T. Scott

Universities can spell "philosophy," or "history," or even harder words like "cybernetics." But they're having a tough time with "videotex." On class schedules throughout the country the name of the newest medium is coming out "video & text," "videotext" or, most common, not at all.

Even though perhaps one-third of American homes are expected to have access to videotex by the next decade, it may be well into the next century before most U.S. universities devote courses to computer-mediated communication. A survey last year by the American Newspaper Publishers Association identified only 77 institutions that even mention videotex in their classes and fewer than a dozen that devote entire courses to it. Each of these videotex courses — offered at Florida, Ohio, Ohio State, Indiana and elsewhere — are still rare success stories, each involving industrial and collegiate cooperation.

Forging a 'direct electronic pipeline'

The difficulties, educators agree, go beyond whether or not to spell videotex with a final "t."

In part, points out Wayne Danielson of the University of Texas at Austin, it is a matter of evolution. "In the late 1950s, no one thought computers had anything to do with words or with teaching." Today, microcomputers, educational software and computer-assisted instruction have forged a "direct electronic pipeline" that put hundreds, even thousands of terminals on the typical campus. University promotional literature now brags about the "student-to-terminal ratio."

Meanwhile, videotex is left to fight its new and separate academic battle. Among the barriers it must surmount are these:

- The needed instructional equipment is still expensive and, where in place, already taxed by round-the-clock users in CAI, programming and word processing.
- The relatively few faculty qualified to develop videotex curricula are frequently pushed to teach traditional classes and to "publish or perish."
- The bulk of videotex instruction is currently taking place, not in computer science, engineering or marketing — currently with too many students to even think of new courses — but in traditionally "low-tech, low budget" departments, such as journalism and English.
- Finally — and this may be the largest "bug" in the program — videotex itself is still a relatively new field, as yet hiring relatively few graduates.

"It's a constant battle to explain why a professional program's budget should not be funded at liberal arts rates," Texas' Danielson reminded a conference on using databases in higher education this spring at the University of South Carolina. As yet, college administrations have been less responsive than industry to the pleas of those teaching computer communications. At Texas, for example, IBM and Apple are providing over $12 million for the 10-year "Project Quest," seeking innovative uses of the technology in education. Danielson, who directs the Texas project, helped pioneer the earliest use of computers in newspaper editing and production while at the University of North Carolina in the 1950s.

"We're in a similar situation today," he reminded the Gannett Corp.-sponsored conference at South Carolina. "It's nice to be right. But in those days, no one knew for sure whether what we were pushing was the future." But the educators won that gamble: In 1969,

American newspapers owned nearly 12,000 typecasting machines and no video display terminals. Ten years later, they owned nearly 22,000 VDTs and typecasting machines were relegated to an age of dinosaurs.

The relative lack of resources has led many videotex instructors to have students create "on paper" systems without the opportunity to see how their creations might work in a mainframe-mediated environment. Other, more imaginative faculty have used micros to simulate more sophisticated database retrieval. At the University of Miami, for instance, a class in "Human Communication Via Computer-Based Media" used Radio Shack computers and the ProFile software package to build a database of readings in computer-mediated communication. References were retrieved by key words.

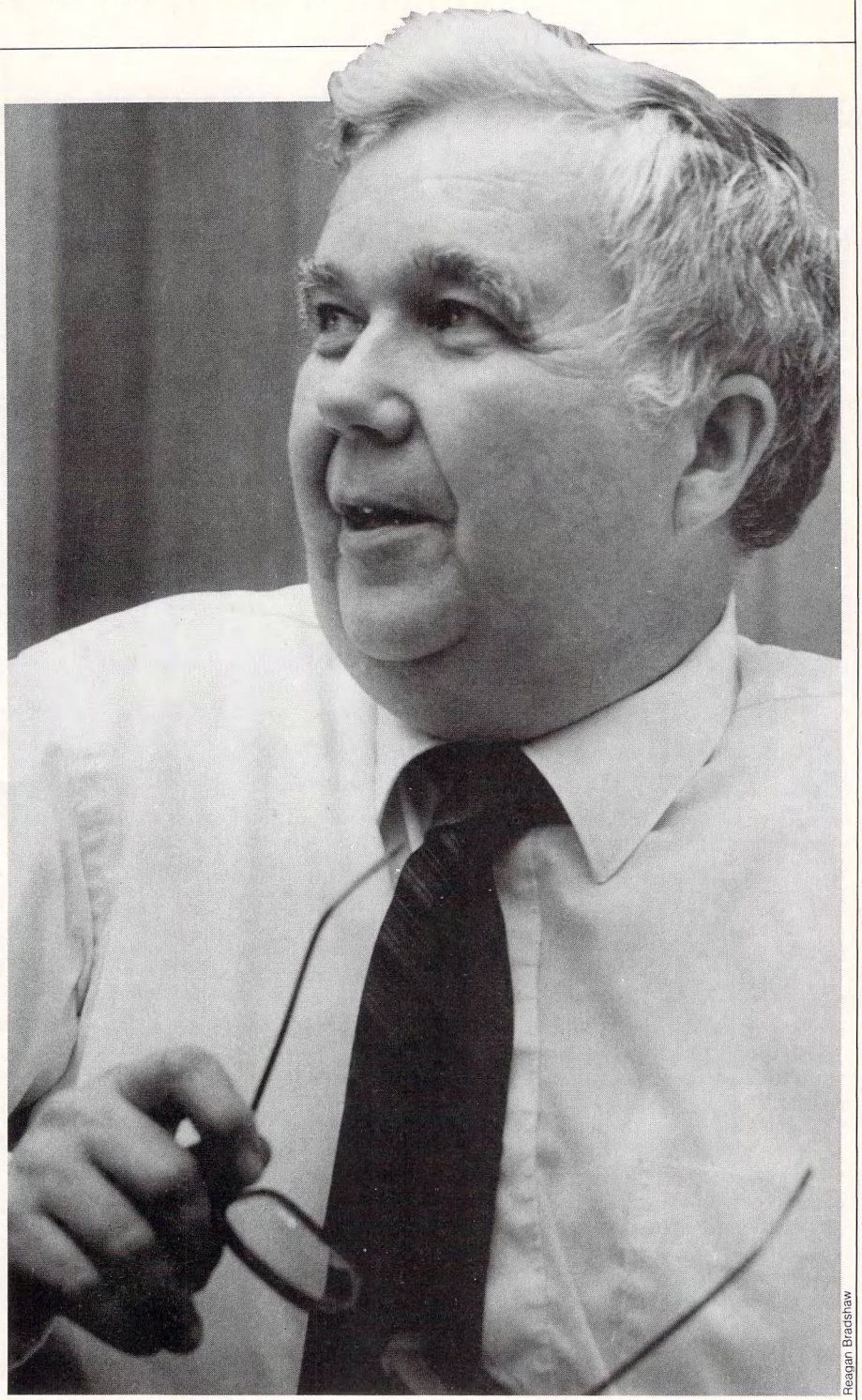
"We also demonstrated existing videotex systems to show the 'state of the art,' " explains Professor William Oates, "but the challenge was for them to apply the principles from a number of communication fields to improve on the present." Final projects ran the gamut from on-paper reports to the complex multi-window "electronic newspaper" of an older, evening student who worked for a computer company.

Industry cooperation

Other university programs are beginning to build videotex courses that use industrial resources. At the University of Florida, students in a two-course sequence put up, edit and maintain a news database on a local cable channel.

Ohio University's College of Communication signed a cooperative agreement with CompuServe three years ago. In addition to providing internships and technical assistance, CompuServe has installed a local, 40-port node to connect OU's videotex students with the company's mainframes, 77 miles away. The node, which includes access for area subscribers, eliminates approximately $1,200 a month the institution formerly spent for long distance WATS data calls. "This represents a vital boost to our program," comments Cortland Anderson, director of the E.W. Scripps School of Journalism, where the videotex courses are taught. "As a town of only 23,000, Athens never would be able to justify such an installation on a commercial basis."

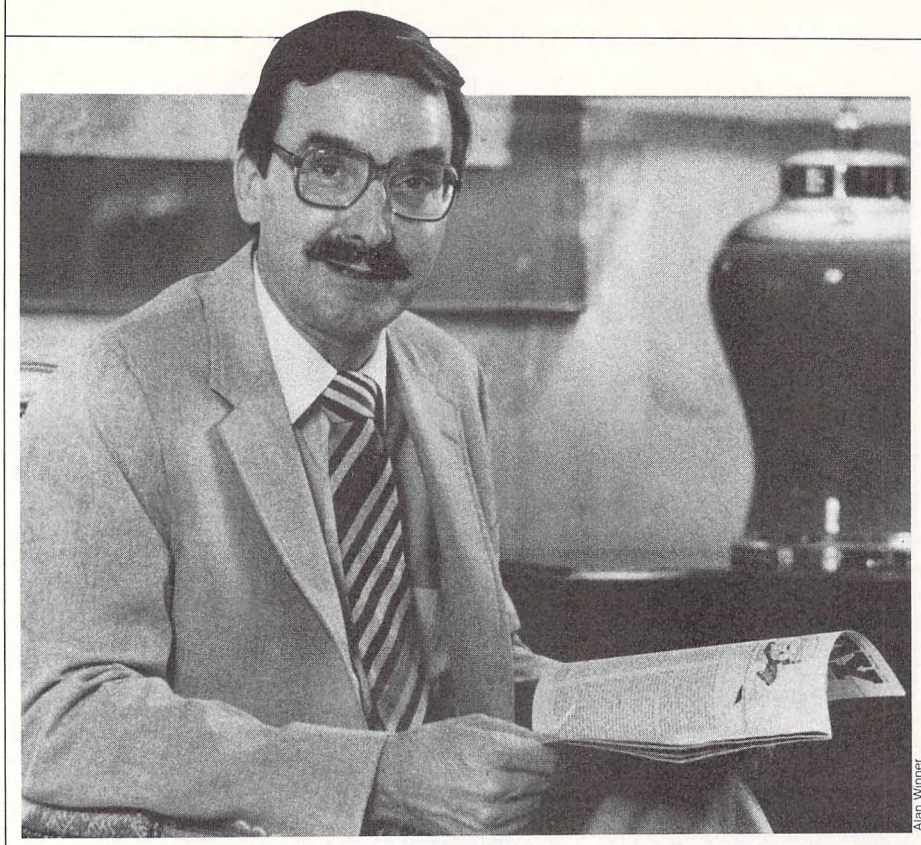
Why are so many videotex programs based in non-technical programs? The



Reagan Bradshaw

"Our continuing obligation is not to follow the professions, but to lead them . . . and not to prepare our students for old jobs, but for the future."

— Wayne Danielson
University of Texas - Austin


Alan Winner

William Oates, University of Miami: "Many of our students find that the behavioral and marketing questions, the communication problems, are the challenging ones."

ANPA study found only three not within schools or departments such as journalism, telecommunications or communication. Part of the answer is that videotex uses well-understood principles of computer communications that are subsumed in existing technical classes. Another may be that videotex is as yet too new to develop either significant research questions or a large job pool for engineers and programmers. But perhaps the most significant is that videotex is, at base, a form of sophisticated communication, requiring professional communicators to bring it to full public use.

"In fact, many of our students find that the behavioral and marketing questions, the communication problems, are the challenging ones," says Miami's Oates. "We have students who also use the course to get familiar with computers, but that's not the thrust of what they have to understand." Other interesting questions related to videotex, including First Amendment rights, copyright and behavior patterns using conferencing and transactional services, also are better suited to communication researchers and scholars.

Academic rewards

A significant problem remains in getting academicians credit for their work in developing videotex courses, associated software and research. Because it is so new, many universities don't give the same credit as they would for writing a traditional academic article or teaching a standard course. "I think there's a national groundswell developing to give the few of us who know about this new field rewards and recognition," says Oates, who also heads the institutional technology committee, International Council of Teachers of English. "Without recognition in the form of promotion, tenure and pay, it will be difficult to develop the interests of others in teaching what is now 'non-traditional.' "

Part of the answer to this dilemma — faced by the practitioners of virtually every new academic field — is the university's need for students. As the "baby boom" generation graduates, most states face a 25 to 40 percent decline in traditional students, ages 18 to 22. However, computer communications has shown the ability to pack classrooms on several campuses with older, community professionals. The younger generation has the power of knowing about computers; the older generation wants that power back.

"We have good data that show solid learning can be done in a truly interactive manner," confirms Rita Oates, Viewtron's education director. "Videotex shouldn't just be page-turning but an interactive teacher." Teachers who understand the subject materials, the classroom and videotex will be needed to develop such programs. Several such projects already are underway. These include the Technology Education Program at West Virginia University and the Electronic Text Consortium, including San Diego State, Nebraska and several other institutions.

As videotex expands in education and other areas, its final academic problem might become "academic." When universities are faced with new programs, they tend to ask: "How many new jobs will it get our graduates?" In part, this is because students tend to ask of each new course: "Will it help me get a job?" At the moment, "we can't say for sure. The industry is too much in a state of flux," comments Robert Smith, executive director of the Videotex Industry Association. In addition, videotex companies themselves are only now defining the skills their employees require. "And just what is a videotex company, anyway?" Smith comments. "Is it an information provider or a national timesharing service or a whatever? . . . The answer to all these right now is 'yes.' "

Meanwhile, educators are beginning to teach videotex classes with the full realization that the knowledge in the field changes on a day-to-day basis. Compared to traditional disciplines such as philosophy or mathematics, videotex's body of knowledge is embryonic — and changing just as rapidly. "Our continuing obligation," Danielson reminded the South Carolina conference, "is not to follow the professions, but to lead them . . . and not to prepare our students for old jobs but for the future."

One videotex educator puts it differently. "I tell each new class they are learning things we didn't know the last time the class was taught. I also quote to them the definition once told me by an IBM executive: 'A pioneer is a person with arrows in his back — who also happens to own California.' "

Byron T. Scott, associate professor of journalism at Ohio University, taught one of the first college level courses in videotex. His CompuServe User ID number is 70007,421.

Ohio University: Starting a videotex teaching and research program

This is a success story. As such, the reader must forgive a little bragging mixed with the telling. It's about how Ohio University started one of the first videotex teaching and research programs in the nation.

Fact 1: it can't be done without significant industrial help. OU had CompuServe.

About four years ago, I found myself in a committee meeting. If an army moves on its stomach, an institution of higher learning advances in groups of three or more, meeting over coffee. This time a stranger sat across the table. He turned out to be George M. Minot, a senior vice president of CompuServe. And he wanted help. Videotex, he said, was a new industry advancing too rapidly to train potential employees and information providers. It also was turning out new products more rapidly than testing facilities could handle. An ideal set of tasks, he reasoned, for a university.

"Fine," my colleagues replied. "Er, what's videotex . . ."

I knew about videotex, coincidentally having just returned from a year's sabbatical with a publishing company that, among other things, was just getting into the strange new medium. Another fine coincidence: that year I had been chosen by the students as an outstanding teacher (we call it University Professor). The prize: teach a class about anything, without going through the year-long process of curricular approval. Never being one to think too heavily before speaking, I heard myself saying: "We can be teaching a course in videotex by spring quarter. Is that fast enough for you?"

Minot said it was, and we were off.

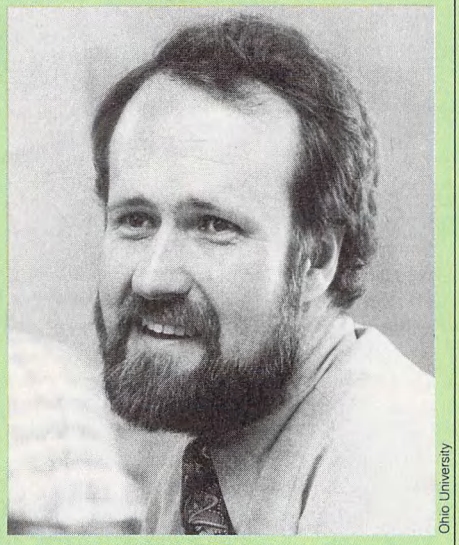
The cold reality hit me only after the glowing adjournment. Although I knew about videotex, I didn't know enough to teach an entire class. (A line from *Gone With the Wind* kept running through my head: "But I don't know nothin' 'bout birthin' no babies, Miz Scarlett!")

Mentally shaken but strong in voice, I informed the registrar that my spring University Professor class would be called "Writing and Editing Videotex." "Fine," the office assistant replied. "Er, what's videotex?"

Fortunately, the agreement our committee subsequently negotiated with CompuServe included internships for both faculty and students. I made sure to be the first faculty intern. Two days a week I drove the 77 miles to Columbus to learn about videotex. Then I drove the 77 miles back to Athens and dumped my fresh knowledge on the students. "That's a good question," I found myself saying more than once, "I'll give you the answer to that next week. . . ."

Fact 2: experimental classes must start with the very best students.

I had hand-picked the 16 undergraduate and graduate students who were part of that first class. The inaugural group included a doctoral student, a professor's wife, a university secretary and the brightest journalism and communication management students I could hijack. "This is a voyage of discovery," I told them. "We just might sail off the edge of the earth."



Ohio University

Byron Scott, Ohio University: "Student-designed systems are uniformly imaginative."

Somehow, we didn't. With a lot of help from CompuServe employees, who gave special seminars to the class and whispered answers to the instructor, each student completed a demonstration videotex feature and actually put parts in working condition on the mainframes in Columbus. Mostly they did this using micros communicating by telephone, long distance. I'll never forget the look on my director's face when he faced me with the first monthly WATS bill of $1,200.

Fact 3: expensive new courses require understanding and encouraging administrators to pay the bills.

Fortunately, CompuServe subsequently installed a local node to which we can hardwire student terminals or connect with as a local telephone call. The E.W. Scripps School of Journalism now teaches Writing and Editing Videotex twice a year for something like ordinary educational costs.

Student-designed systems are uniformly imaginative. They've come up with special forums for the parents of twins, war game buffs and chocolate lovers. They've designed public access systems for tourists wanting to camp in Ohio, make rock concert reservations and find the best restaurant in Cleveland. Last quarter, the class put together a demonstration forum being considered for actual use by the 200-some member schools of the Association for Education in Journalism and Mass Communication.

Last winter, the class made final presentations for critique by Cindy Silvani-Lacey, CompuServe's manager of educational services. "I'm impressed," she told them. "Two or three of you are pretty far ahead on ideas we've been working on, too."

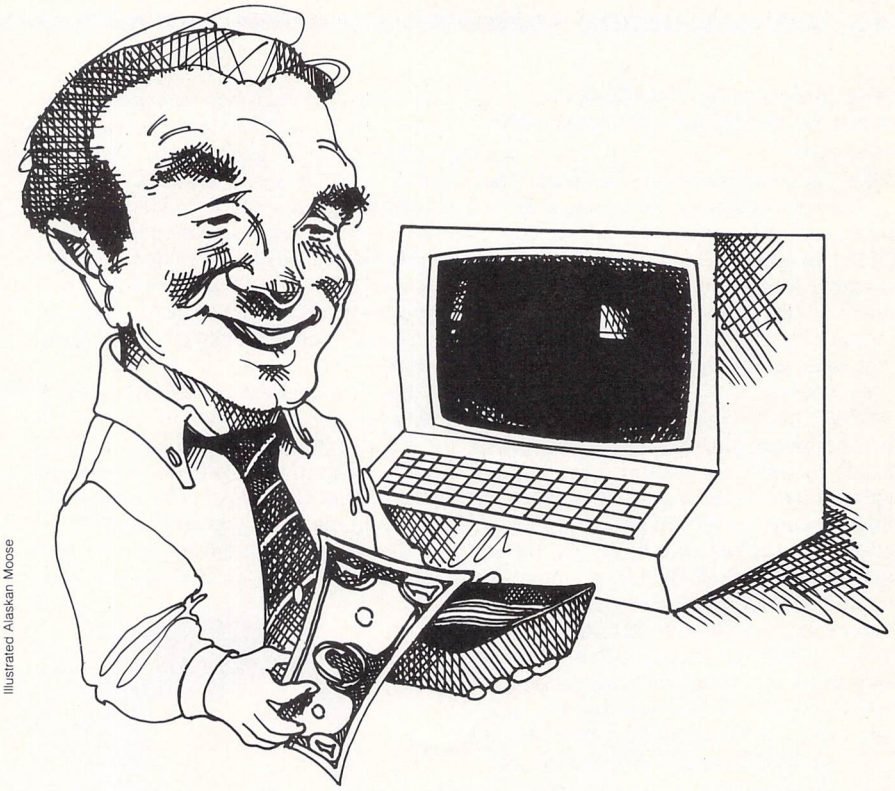
Also impressed by our progress in videotex, AT&T's Educational Foundation gave the College more than $200,000 in videotex frame generators and terminals, the largest such grant to any school in the United States. When the journalism school moves into a new building this winter, there will be a separate videotex laboratory with the CompuServe node and an AT&T frame generator as honored occupants.

Other faculty members in journalism and communications systems management have interned at CompuServe and are developing and teaching videotex courses. (Videotex at OU has never been a one-man show.) We've also begun to do some basic research. Within the next year we hope to start two new courses, in videotex graphics (NAPLPS) and database management.

This past year, too, we finally got that first, experimental videotex course formally approved. By now I was expecting the call that came from the University Curriculum Council: "Your application is fine. Er, what's videotex?"

— B.T.S.

For a Few Extra Dollars



Illustrated Alaskan Moose

You get what you pay for, the old saying goes. And there's no doubt that you pay when you use a computer network. Whether you access your account often or seldom, the monthly bill wings its way to your mailbox with devastating punctuality.

Overall, the bills are pretty reasonable. CompuServe offers more than many a timesharing computer network, and it offers it at less cost than most. Some services on the network, though, are not available for that regular hourly rate. They sport foreboding dollar signs next to their menu numbers, indicating an extra charge. Why use such services when you're already paying for regular network time?

In most cases, you don't need to access a "premium" service. The regular services open all the doors you need at regular rates. Still, there are times when a premium service offers that extra bit of information you need, information that can be gleaned nowhere else. When those special needs crop up, it's time to take a closer look at that dollar sign. What precisely does it mean?

Consider, for example, the Official Airline Guide (GO OAG). While using the OAG always incurs extra expenses, the guide is less expensive in the evening than it is in the morning. Certainly it's great to have all that airline information at your fingertips, but do you really need it this morning? Can it wait until six o'clock? If so, why not save a few bucks by looking it over tonight?

Second, is the OAG really where you want to go? If you seek up-to-date airline departures and arrivals, it is indeed! No other service covers as many airlines, listing everything from direct flights and connections to current fares in both economy and first-class sections. But if you're searching for information on lodging, or would like to know what conditions exist for travel between different nations, OAG can't help you. You want to check out other areas of the Travel Services menu.

Different "premium services" add different extra charges to your bill. Wherever a dollar sign signifies an extra charge, therefore, you'll also see a menu item offering information on the menu item with the dollar sign — and that information comes at the regular rates. Before choosing any premium service, read that information. The information offered will include just how much more the premium service costs you, during what hours of the day you can access the service most inexpensively, what types of information the service gives you for your extra dollars, and more.

Those extra rates come in a dazzling variety of shapes and sizes. OAG, as we've noted, charges by time, and those extra time charges are higher during prime time than during non-prime hours. Services such as *The Washington Post Online* and *USA Today* charge subscription fees, requesting payment for a month's, semi-annual or annual subscription. The NWS Aviation Weather service charges a mere 25 cents for each session. And one service, providing flying routes, actually charges by the mile.

Similarly, each premium service has its own special protocol. Some use regular menus; you just enter the number of the menu item you want, and your choice scrolls down your screen. Some have a special set of commands. A few interact with your computer program, and talk "machine to machine" rather than directly to you.

When a service uses a special set of commands, your pocketbook is best served by a working knowledge of those commands. Learn the command structures before you actually access the service. Do you really want to shell out extra money for a "help" command that was available for the regular access rates?

Services that use a machine-to-machine interface offer the best value for your computing dollar, if you know how to use them. Such services include portions of the various stock quotation and mutual fund information areas on CompuServe. To take advantage of your own computer's speed and accuracy, you need not only know how to make your machine interact with CompuServe, but also how to make CompuServe interact with your machine. A working knowledge of your communications software will serve you well here. Read that manual! It will help you avoid expensive wasted time.

When you unburden your pursestraps to look into a premium service, therefore, spend your extra dollars wisely. Many of these professional services demand a professional's price. But just as shopping around provides you with the knowledge to get the best value for your money, so will careful attention to details give you more than your money's worth when you compute for just a few extra dollars.

Alex Krislov is a free-lance writer from Cleveland. His User ID number is 70007,2130.

Nancy Johnson: "Before WendMail, the only way to accomplish these communications was via express courier."

to accomplish these communications was via express courier."

The WendMail communications system is used for the day-to-day tracking and logging of data from the chains' local stores, and it employs a series of offline forms to secure this information from the company's approximately 100 sales areas. Included in the electronic reporting system are forms for tallying management headcounts, daily sales, food waste and personnel turnover. Store budget, crew leader and store alignment reports are also communicated through the system.

The speed, detail and accuracy of the electronic reports used by company operations have not gone unnoticed within the Wendy's organization and today nine additional areas are using the WendMail communications system.

These divisions include purchasing; risks/benefits; franchise operations; international; research and development; legal; marketing; information systems; and Wendy's Management Institute, the company's management training facility for store managers, supervisors, area directors and franchise owners.

Studies of the user population in Wendy's company operations group indicate that costs per user for the communications system dropped by one-third over a six-month period as the user population nearly doubled.

Future plans for the electronic mail application may include closer tie-ins with the local stores and the addition of more food vendors. This is possible through CompuServe's national telecommunications network and the ease of accessing it via many varieties of microcomputers.

— Richard A. Brownewell

Travel Products Offered to Executives

CompuServe's corporate customers now have the option of selecting online travel products for their Interchange or other private online communications system. Products of interest to business travelers range from online flight reservations and hotel accommodations to an upcoming online guide to major cities.

The objective is to give the business traveler the ability to make reservations and obtain information, so the business travel department can concentrate on managing travel budgets instead of only handling reservations.

"Because of the changes coming about due to deregulation, it's becoming more important for businesses to have direct control over travel expenses," says John Matura, CompuServe's travel product specialist.

The travel product system for corporate customers can be designed for the needs of a variety of companies regardless of size. "The type of information we can provide is not available together through other sources," says Matura. "We're able to provide information on hotels, air travel and destination cities. Through the private forum capability, business executives can communicate with employees in branch offices before leaving on the trip or while they're on the way."

In addition, the aviation services are available for executives to add to their private videotex packages. Since many major corporations have private jets or helicopters, Matura says the information for private pilots will be useful for business travelers as well. CompuServe users can check weather radar maps and EMI Flight Planning information.

International travel product offerings provide for processing visas online and verifying such information as exchange rates, health requirements and foreign holidays.

The decision to make travel products available for business information customers to add to their systems "positions companies to take advantage of changes in the travel industry as they become available," says Matura. For more information, contact Matura at CompuServe.

Following is a partial listing of business travel products that business information customers may add to their private videotex systems.

TWA Travelshopper — Information and reservation database of airline schedules serving nearly 100,000 pairs of cities and including 3 million fares. Employees can make travel reservations from their desks.

The Official Airline Guides Electronic Edition — Offers complete flight schedules and fare information for most carriers worldwide, including a comprehensive international fare program in both U.S. currency and foreign currency. OAG also offers a "closest airport" feature for selection of flight destination.

A-Z Worldwide Hotel Guide — A comprehensive listing of more than 40,000 hotels worldwide, including rates, facilities and amenities. Users may search for accommodations based on a series of 24 different criteria.

Department of State Advisories — A database of information on destinations where war, political unrest, hotel/motel shortages or medical alerts make travel hazardous.

Visa Advisors Service — Provides all the necessary information for entry into most foreign countries, including required forms, addresses, pictures and health information. Users may process visas online.

Pan Am Travel Guide — Displays entry regulations of foreign countries, health requirements worldwide, customs regulations and banking holidays for those planning travel in Europe, Asia, Africa or South America.

Travelvision℠ — Provides information for ground transportation planning, road maps, guides and atlases for the United States, Canada and Mexico. A personalized routing service for short business trips as well as mileage charts are also available.

Decisionline Travel — USA Today daily news reports on matters affecting travel. Updated daily.

Travel Forum — Online forum for travelers to discuss experiences and recommendations on various travel destinations.

Discover Orlando — Provides information about Orlando and Central Florida, including Disneyworld/Epcot Center.

Florida Forum — Interactive program letting travelers discuss their experiences in Florida and make recommendations for restaurants and accommodations.

Vermont Tourism — Display of travel information provided by the State of Vermont. Includes information on restaurants, hotels, bed and breakfast inns, festivals and conventions.

Weather Radar Maps — Assembles a radar precipitation map of the United States with numerical indicators of density. Updated hourly by the National Weather Service.

I/B/E/S: Access Earnings Estimates by the Experts

Stockbrokers, money managers and investors have long wished they could gaze into a crystal ball and accurately predict the future outlook for their investments. Now, through the Institutional Brokers' Estimate System, known as I/B/E/S, offered on CompuServe, they can do the next best thing.

This database gives users access to the projections of approximately 2,400 analysts from more than 130 brokerage firms throughout the United States. It provides monthly earnings per share estimates for stock issues of more than 3,400 top companies selected by those analysts. The predictions are updated weekly.

I/B/E/S tells investors the number of analysts who follow a particular stock, the mean and median price estimates, the highest and lowest prices predicted, the number of analysts predicting upward and downward price changes, and the amount of variation among their predictions.

Earnings estimates for the next two years are included, as are five-year growth estimates. Quarterly earnings estimates are now available.

"The service is based on a simple premise — that stock prices are primarily determined by people's expectations of the future instead of the past," says Stanley Chamberlain, partner in the New York brokerage firm Lynch, Jones & Ryan, the information provider for the service.

Because I/B/E/S reports the consensus of analysts' opinions, it includes information on any company followed by an analyst. "Whether a company is included in I/B/E/S is a measure of its popularity," says Chamberlain.

The database has proved popular among users — especially among brokers and professional money managers.

Ed Petner, securities analyst for the money management firm Lynch & Mayer, a frequent user of the database, notes that it has helped his firm's staff. In selecting an investment, "one of the things you'd usually want to see is the earnings per share for the latest earnings period, as well as the next two years," Petner says. This information provides a sense of the anticipated growth rate.

The price/earnings estimate is also a good measure of a stock's value, Petner says. "A stock may look expensive based on last year's earnings, but if earnings are going up a lot, it's important to know."

Stanley Chamberlain: "The service is based on a simple premise — that stock prices are primarily determined by people's expectations of the future instead of the past."

I/B/E/S can also help investors spot stock trends. If stock earnings are dropping faster for several months than analysts have predicted, their predictions were probably too optimistic. The price will most likely continue to drop.

Chamberlain points out that investors can use information on stock trends to their advantage. "One profitable way to use this data is to try to identify situations where they think the consensus forecast is wrong." Since stock price is determined by the consensus, when that consensus is wrong, profitable investments can be made against market predictions.

Through I/B/E/S, users can also compare their own brokerage firm's predictions with the consensus or check the level of growth predicted for a particular company compared with others in its industry and with other companies in general.

Since analysts' predictions are constantly changing, the weekly revision of the database is important. Over a month's time, approximately 30 percent of the estimates change. "That's why an online medium is valuable. It can monitor that data in a timely fashion," says Chamberlain.

Investors can use I/B/E/S in conjunction with CompuServe's 10K PLUS™, a system of software integrating screening, sorting and ad hoc reporting of fundamental financial databases for rapid access and comprehensive analysis of historical and current financial information. Users can generate customized reports or screen a given list of companies for those with particular characteristics. For instance, it's possible to search the database for all companies whose earnings per share during the previous month increased by a significant percentage above the analysts' predictions.

To generate such a customized report, access CSCAN and input the selection criteria. The service will then list the companies fitting the criteria.

Ed Zier, branch sales manager of CompuServe's Wall Street office, explains that I/B/E/S is a necessary addition to the spectrum of business information services offered. While Value lists historical stock prices dating as far back as 1973 and COMPUSTAT II® lists prices for 6,000 companies dating back 20 years, money managers still need another type of information to give them a total picture of the company's finances. "Investors want not only historical information but also future-oriented information — and that's what I/B/E/S provides," says Zier. "It's a good adjunct to our line of financial databases."

— Kathy Baird

BUSINESS PRODUCTS UPDATE...

Quarterly Estimates Available Through I/B/E/S

CompuServe's business information customers can now obtain quarterly earnings per share estimates through I/B/E/S, the Institutional Brokers' Estimate System, provided by Lynch, Jones & Ryan.

I/B/E/S offers consensus corporate earnings projections on the stock issues of more than 3,000 companies for the fiscal year in progress and for the next fiscal year. The projections represent opinions of over 1,200 analysts from 70 institutional sources, and they are updated weekly with report changes. Five-year growth estimates are also included.

"Besides being helpful for investment research, data from I/B/E/S is useful to companies involved in competitive analysis or acquisition analysis," says Bob O'Malley, financial product manager at CompuServe. "They find out what analysts think of their competitors or companies they may want to acquire."

The addition of the quarterly earnings per share estimates will benefit CompuServe's business customers in at least two major ways, according to O'Malley. First, in analyzing a company that makes most of its income from snowblowers in first quarter and from lawnmowers in third quarter, for example, users will find it more valuable to pinpoint the earnings estimate for each quarter than see a composite earnings estimate for the full year. Estimates are available for two quarters into the future.

In addition, the quarterly estimates feature gives users more opportunities to find earnings "surprises" and trade on the basis of that information. For example, if the analysts predicted that a certain company's earnings would be 50 cents per share and instead they were 75 cents per share, the user could benefit by buying into the stock as soon as the unexpectedly high earnings were known. Since earnings news is usually released on a quarterly basis, knowing the quarterly earnings estimate is essential to this type of investing. It also gives the investor four times during the year to evaluate for an earnings surprise, rather than just once a year.

— Mary Mitchell

Additions to Disclosure II

Disclosure Inc. has added more financial and textual data on companies, search fields, information on stock transfer agents and listings of Forbes numbers to its Disclosure II database for CompuServe's Business Information Service customers.

The Disclosure II database, compiled from reports filed by law with the U.S. Securities and Exchange Commission, contains financial and textual information on more than 9,500 publicly owned companies. The database is available to both CompuServe's Business Information Service customers and subscribers with an Executive Service Option on the CompuServe Information Service. The new features are currently available to Business Information Service customers.

New financial data for the companies listed in Disclosure II includes the sources and uses of funds statement and the quarterly balance sheet. This information supplements the three most recent income statements and two most recent balance sheets, key financial ratios, and sales and operating income for each of a company's reported divisions.

The narrative file of textual data will now contain a President's Letter if such a document is part of a company's annual report. Other textual information in Disclosure II includes a business description, management discussions, summary data on significant stockholders, subsidiaries, special events and lists of the name, age, salary and titles for officers and directors.

With the new search fields feature in Disclosure II, users can more quickly locate specific information about companies. "For example, a user could do a comparative analysis among law firms," says Bob O'Malley, CompuServe financial product manager, "and determine that law firm XYZ is the listed legal counsel for companies A,B,C and D. If you knew a certain company was entering litigation, you could find out who would be representing the company, and this may help you determine the company's chances of winning." This type of information would be useful to anyone making an investment decision .

Stock transfer agent information, recently added to Disclosure II, is useful to anyone who owns stock not held by a brokerage firm. If the stockholder wants to change convertible preferred stock to common stock before trading it, for example, the holder would have to find the stock transfer agent. CompuServe's business information customers can now locate this information online through Disclosure II.

The listings of *Forbes* numbers in the database tell how the company fared in *Forbes* magazine's rankings based on market value, total assets, profits and revenues.

Disclosure II is available on the CompuServe Information Service under the Money, Markets & Matters section, "Corporate Reports." Business information customers may obtain more information on Disclosure II from their CompuServe branch representatives.

VSCAN Enhanced

The VSCAN Screening Package, available to CompuServe's business information customers, now has a dividend history feature offering information on company dividends as far back as 1968. VSCAN enables users to select stocks on the basis of price, earnings and dividend yield.

By using the dividend history information, CompuServe customers can determine the consistency and growth of a particular company's dividends. Users can analyze as many companies' dividends and as many dividends back as they want. It's possible to select a date range for dividends or a specific number of dividends.

Through VSCAN, a user now has the capability to report a greater number of search fields about dividends than was previously possible and to report them in different column locations on a page. Users can determine whether a company's dividends are cash, stock in the same company or stock in another company's stock (cash equivalents). CompuServe users can find out the X date, the payable date and the record date for the stock as well as more obscure details about the dividend.

Users can obtain reports on dividends for a large number of companies, and look at dividends by type or by date.

Linking the Biomedical Community

A major responsibility of hospital-based biomedical engineers and technicians is maintaining current information on medical equipment used in the hospital. The primary source of this information is the weekly Food and Drug Administration (FDA) Reports. However, when distributed by conventional means, the reports may take as long as three weeks to reach the biomedical professional. After reviewing these and other reports, and comparing the lists of recalled products against the hospital's inventory, the professional then decides what action to take.

"When there's a recall on a particular piece of equipment, you may wonder if it has had that recall before or if other pieces of equipment have had similar recalls," says Akron City Hospital's Jeff Drew. "You start digging through the recall orders and it just becomes too much, so you stop and you never find out."

It was out of this dilemna that Dr. Bruce Taylor, then director of medical engineering at Akron City Hospital, and Drew, then a University of Akron graduate student in biomedical engineering, saw the need for an electronic information and communication system specifically for the biomedical engineering community. They developed BMEDSS℠ (Biomedical Engineering Decision Support Services) through CompuServe about a year ago and the system is already impacting the way biomedical engineers, associations and medical equipment manufacturers do business.

The BMEDSS service incorporates eight databases of biomedical reports and abstracts, CompuServe's InfoPlex® electronic mail system and a private online forum where biomedical professionals can post messages and read association newsletters.

Inventory Comparison

By linking the FDA Enforcement Reports to an inventory comparison program, Drew, now director of BMEDSS, and his colleagues devised a way for biomedical engineers to quickly investigate suspect medical devices. Each hospital submits an electronic file of its inventory to the system. Then, when an FDA report is issued, the BMEDSS system automatically compares the hospital's inventory with the Enforcement Report. If there is a match, the user will get a message the next time he logs on.

"All he needs to do is make sure that the recall applies to the specific serial numbers of his equipment and then read that particular FDA Enforcement Report. The result is an average of seven other reports the biomedical engineer doesn't have to read that week," says Drew. In addition, if there is a recall of a piece of equipment used in the hospital, the BMEDSS user will receive notification earlier than he would through the traditional means. While it can take up to a few weeks for each set of FDA reports to be mailed out to professionals, the same information is available electronically the day after it is issued.

Mark Braun

Jeff Drew: "The advantages to associations are that they can use the forum bulletin board for posting their own newsletters and the electronic mail system to send private messages."

Equipment Reports

Other information on medical devices is available through two new features on BMEDSS, the FDA Device Experience Network and the Mandatory Device Reporting service.

Biomedical engineers may use the BMEDSS system to enter reports on medical equipment which may have some serious design or operational fault. "A piece of equipment in your inventory may have caused a death or serious injury," says Drew, "and you'd like to report that to the proper federal agency. We have that facility and it's free of charge." When a user enters a report, the information goes to the FDA and then comes back to BMEDSS through the Device Experience Network (DEN) Reports.

Manufacturers of medical equipment are legally required to report to the federal government any instance of death or serious injury related to their equipment. Manufacturers may enter this information at no cost through BMEDSS. After the reports have been transmitted to the appropriate federal agency, they are available through the Mandatory Device Reporting (MDR) database on BMEDSS.

Online Abstracts

Biomedical professionals can access a number of reference sources and journal abstracts through various databases on BMEDSS. Each database is keyword-searchable; Drew has already set up possible keywords so that a user can search more quickly. Most of the databases are updated on a weekly or monthly schedule.

Users may order complete articles and publications online and receive a hardcopy in the mail. "The AAMI Standards, for example, is a 50-page document," says Drew, "so it's not practical to put something like that online." Instead, the abstracts are offered and users may order the complete publication.

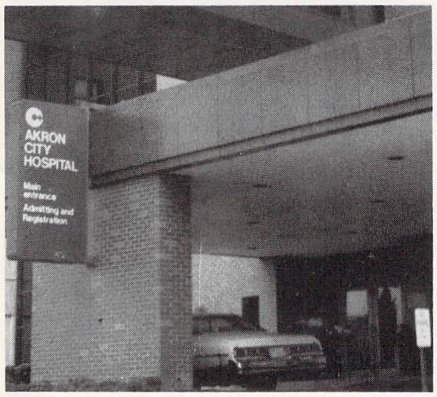
In addition to the FDA Enforcement DEN and MDR Reports, documents from the FDA include the Recall Reports on Pharmaceuticals, the Talk Papers (professional papers submitted to the FDA) and press releases. The Device Experience Reports are available as far back as 1973 and the Enforcement Reports date back to 1978.

The Journal of Clinical Engineering abstracts from 1976 to the present are available in another BMEDSS database.

The Association for Advancement of Medical Instrumention (AAMI), offers three publications through BMEDSS: the National Standards and Recommended Practices abstracts; the Technology Assessment Reports, Updates and Information Reports abstracts; and Medical Instrumentation Journal abstracts.

Professional Associations

AAMI is also one of the professional associations linked to the BMEDSS system. "The advantage to them (associations) is that they can use the forum bulletin board for posting their own newsletters," says Drew. "They can use the electronic mail system to send private messages. It provides a powerful communication medium for groups."



Mark Braun

A Chicago area biomedical society and Sun Health, a health consortium in the South, are two other organizations involved with the BMEDSS system. Group discounts are available for association members who subscribe, according to Drew.

Communications

Communications among biomedical professionals throughout the world is another function of BMEDSS. "It links the biomedical community, so professionals can find out trends and better take care of medical equipment and hospitals," says John Skruck, biomedical abstractor for BMEDSS at Akron City Hospital.

Drew says the forum bulletin board offers users the chance to discuss such topics as cardiovascular research, imagery construction, hypothermia treatment and radiology. Bulletin board sections range from new product information to job listings.

InfoPlex and the private message capability on the forum bulletin board are ideal for biomedical engineers, according to Drew. "They are in and around the hospital and often hard to reach by phone. It's easier to send a letter, but letters take days to get there, whereas electronic mail is delivered in seconds. It's as fast as a phone call — without the necessity of having the person on site."

Future Plans

Drew and the team at Akron City Hospital are now looking at international markets for BMEDSS. In fact, Drew and Taylor have presented the system to several universities, the Ministry of Public Health and the Ministry of Electronics in the People's Republic of China. The response was favorable, according to Taylor, because "although the Chinese have acquired modern technology and instrumentation, information transfer on on the use and potential hazards of the equipment is not readily available." Drew and his colleagues are working with the Chinese to set up BMEDSS.

An equipment maintenance system is planned for the future. While any hospital or manufacturer may subscribe to the system, the equipment maintenance program currently in the works is designed mainly for the needs of smaller hospitals, those without the financial resources to purchase mini or mainframe computers on which to run equipment management programs. Since BMEDSS is a timesharing system, the user needs only a modem and terminal.

For more information about BMEDSS, contact CompuServe's Cleveland branch office.

— Mary Mitchell

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Educational Travel Connection

The Educational Travel Connection, a new service on CompuServe, is a central source of information on educational vacations and study trips abroad. Approximately 75 educational travel organizations and 800 colleges and universities offering trips are listed in the database. All trips offer either college credit or adult continuing education units.

"We want to provide the user with guidelines to look at a travel program and see what it will offer him or her," says Terry Strickland, information provider for the service. Strickland and his partner Randy LeGrant have a combined 25 years of experience in the educational travel business.

In the Educational Travel Connection, subscribers can find information on trips for adults, college students and both junior and senior high school students.

A section of information useful in preparation for a trip abroad includes such topics as packing, insurance, photography, customs requirements and passports. In addition, there is advice on arranging to visit relatives in foreign countries, budgeting for likely costs and bargains, and planning for health-related concerns.

In a section useful while traveling, there is information on food availability, phoning home, weather and climate, currency, culture shock and foreign medical care.

Another section allows returning travelers to assess their trips and travel organizations for other prospective travelers. Also, there is a listing of the CompuServe User ID numbers of other subscribers who are willing to serve as references on travel-related topics.

In the Educational Travel Connection Forum, subscribers can exchange information on their personal educational travel experiences and communicate with guest experts in the travel industry.

The service also includes tips on free travel, such as how to become a group counselor and how to generate interest in prospective student travelers through meetings and other activities. In addition to a list of recommended orientation materials, there is a travel quiz on group etiquette and a quiz about situations frequently encountered by counselors.

Also listed in the forum's data library are recommended readings, free travel-related publications, films and maps, and travel tips. A monthly newsletter is offered through the forum for reading at no additional charge. The same newsletter is available in printed form for a $30 annual subscription fee and may be ordered through Feedback.

The number of students traveling abroad has increased steadily in recent years and is expected to reach 1.2 million this year. As more travel opportunities become available to more travelers, the Educational Travel Connection on CompuServe (GO ETC) should help subscribers make the right connections for their educational trips abroad.

— Kathy Baird

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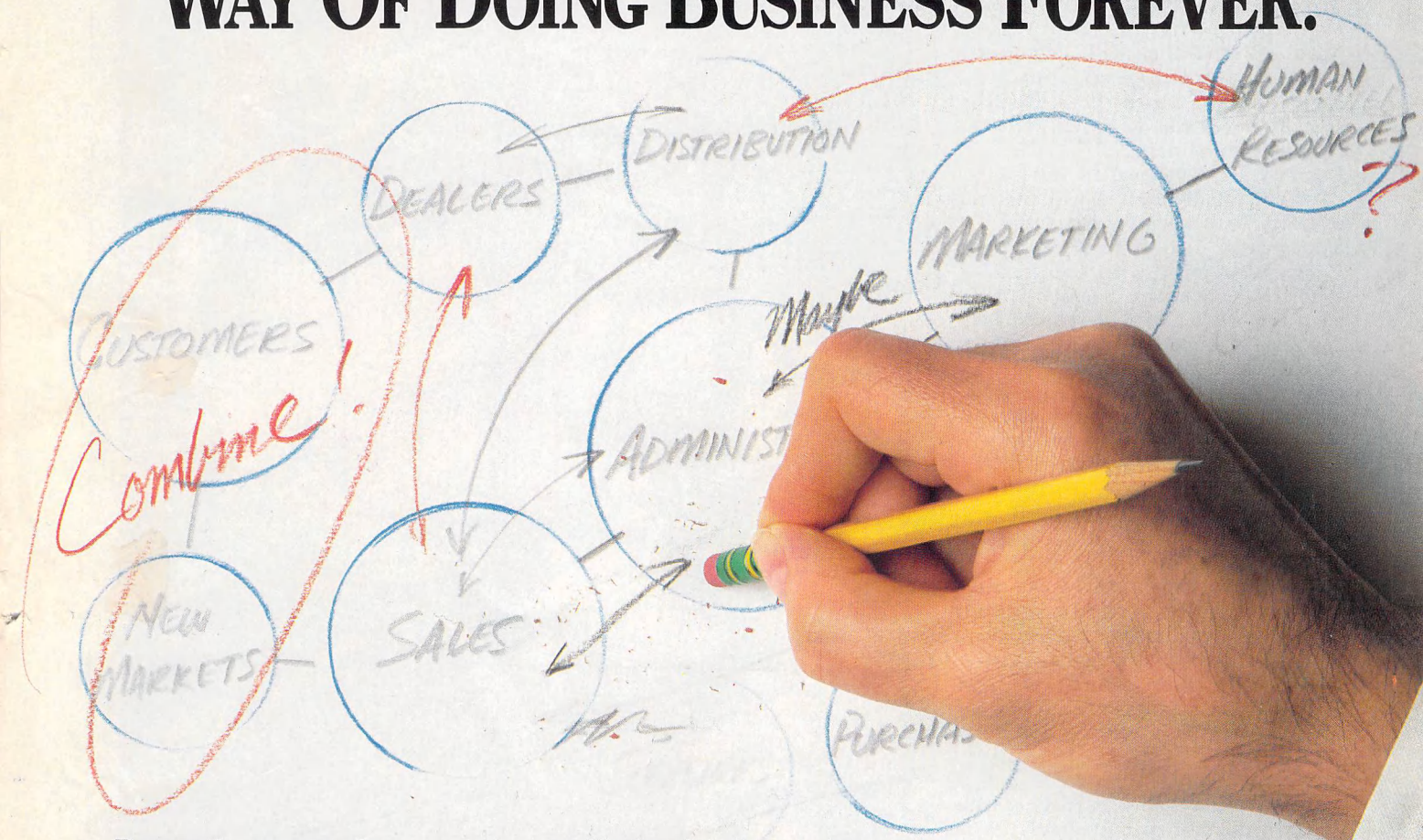

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Heinz U.S.A. uses CompuServe's electronic mail to communicate sales and promotional information to the company's sales personnel. The speed and accuracy of InfoPlex have resulted in improved customer service and effectiveness.

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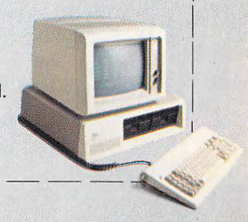

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Want to hear the latest scoop from Hollywood? Interested in nationwide prices and developments in video hardware and software? Or perhaps you'd like to "talk" to a rock star through your computer. You can do all this and more through the entertainment offerings on CompuServe's Information Service.

"We're rapidly expanding in both our offerings and in growing popularity among users," says Dan Meeks, CompuServe product marketing manager for Home Services. Some products, such as RockNet, were developed as recently as nine months ago while others, like the National Satirist, have been online for more than three years. Regardless of the season, there's something new and exciting happening in each of the entertainment services on CompuServe.

Hollywood Hotline is compiled, written and edited by show business veteran Eliot Stein. A former actor residing in Los Angeles, Stein attends movie premieres, obtains press releases from major television and movie studios, and has contacts with talent agents nationwide. Because Stein gets his information firsthand, CompuServe subscribers often see it before it appears in other media.

Stein updates daily the entertainment news, trivia quiz and soap opera summaries on his service, giving regular users an insider's view of show business happenings and personalities. Users can also access recent offerings in these categories, up to 18 days prior to the current date.

Hollywood Hotline's entertainment features area provides charts and ratings of TV shows, movies, records and awards. The entertainment encyclopedia is an in-depth account of everything from prime-time TV programs for any given year to lists of nominees and contenders for previous Grammy, Tony and Academy Awards.

Las Vegas Hotline, a service provided by Geno Munari, offers information about entertainment in Las Vegas. CompuServe subscribers can find out who is appearing at the various hotels or obtain information about the casino games.

Whether users are planning a trip to Las Vegas or just interested in understanding more about happenings in the city, Las Vegas Hotline is a useful source of information.

"If you're a vacationer or business traveler, you can find out how to play the casino games like a professional," says CompuServe product marketing specialist Linda Thoirs. Users can determine the games having the best odds, the types of slot machines with the highest payoffs and other "insider information."

Gerhold/Smith

RockNet symbolizes "one of the most innovative computer environments today," according to Meeks. A display database provides ratings charts, announcements of new records and music videos, opinion polls, news about rock personalities and more. The other component of RockNet is an interactive online forum where users can communicate among themselves and with radio and record industry personnel, musicians and disc jockeys. Nightly online conferences sometimes feature national-

Hollywood Hotline	GO HOLLYWOOD	Eliot Stein	76703,305
RockNet	GO ROCK	Les Tracy	76703,1061
Showbizquiz	GO SHOWBIZ	Eliot Stein	76703,305
Movie Reviewettes	GO MOVIE	Eliot Stein	76703,305
The Whiz Quiz	GO WHIZ	Nan Hudes	76703,441
The National Satirist	GO KCS	Thomas O'Brien	76703,607
Las Vegas Hotline	GO VEGAS	Geno Munari	76703,3040

ly known guests. Users can communicate directly with them and obtain detailed information about their professions.

Showbizquiz, also edited by Eliot Stein, could keep you occupied for weeks. In addition to five Showbizquiz trivia multiple choice games, users can choose from general categories such as Academy Awards (a test for the 1930s and '40s, and tests for every decade through the 1980s), TV Show Teasers and the Soap Characters Quiz (each TV network has its own quiz). Trivia buffs can also select the Heavy Metal Music Quiz, the Twilight Zone Test, the Star's Real Name Game and more. Individuals such as Bette Davis and Alfred Hitchcock have quizzes named after them.

Movie Reviewettes is another feature from the prolific Stein. Users receive an objective, detailed plot summary, along with a listing of the film company, director, producers, stars, writers and rating. "Stein rarely pans movies, and when he does, his reasons are well-documented," says Meeks. Since Movie Reviewettes appear online in advance or at the same time as theatre releases, CompuServe users get an idea of what the movie will be like before heading to the cinema. In addition, Stein often covers little-known or experimental flicks of interest to movie buffs.

The Whiz Quiz is both entertaining and educational. Three new categories are added quarterly, beginning each January, for a year-end total of 12 categories. Recent topics include the *Bible*, music, and science and technology. Literature, myths and legends, and history will be added by December.

The Whiz Quiz is different from most trivia games because the researched and play-tested questions come from Grolier's *Academic American Encyclopedia*. Users get a "mini-lesson" — a pertinent fact preceding the question, the multiple choice question itself (with two chances for a correct response) and another bit of information after the last answer.

The game's versatility is enhanced by its allowing for one to four players. Also, users can play the same category over and over again, since each 30-question game is randomly chosen from a large set of data. A perfect score earns you a place in the Whizard Hall of Fame. Even if you miss an answer, the computer responds with encouraging prompts.

The National Satirist is for users who like off-beat and political humor. Weekly issues include lampoons, parodies and general tomfoolerly related to current events. Users can access the material from the previous week's issue, too.

Other features of this service include one-line Quip Snips, A Mock for All Seasons, Living in Consumer-Land and Trivial? Forsooth! These are also updated regularly. In addition, The National Satirist is a forum for budding humorists. Contact the forum administrator, Thomas O'Brien, for more information.

Stay tuned to CompuServe when you want to be entertained or learn more about about the music, television and movie industry. It's guaranteed to keep you in the know.

— *Sandra Gurvis*

at your fingertips in the Electronic Mall ...

OUR NEW *NO DEDUCTIBLE SERVICE CONTRACT

Where else can you buy a no deductible service contract covering many extras not covered by conventional dealer contracts, such as towing, car rental and lodging/travel expenses while covered components are being repaired? All for up to 50% less than comparable contracts.

If you have purchased a new car within the past nine months which has less than 9,000 miles - or plan to purchase one soon - you qualify for service coverage at the cost of only pennies per day.

To discover more, simply type GO AC from any prompt in the Consumer Information Service of CompuServe.

- No Deductible Coverage
- 5 year/Unlimited Mileage and 6-Year/72,000 Mile Service Contracts
- Includes Allowance For Towing, Car Rental and Lodging/Travel While Covered Components are Being Repaired
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Suite 100
Akron, Ohio 44311
Phone: (216) 434-6651
EASYPLEX 70007,1530

Circle 9 on the Reader Service card or GO EBB.

U P D A T E

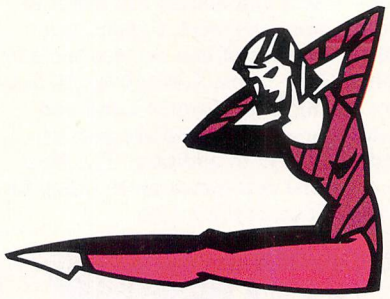
Keeping Fit At the Mall

Fitness is key to the 1980s. At The Electronic Mall™ you'll find dozens of merchants dedicated to your fitness — both physical and financial.

Your first stop in the Mall might be new merchant Carolina Health & Fitness (GO HF) where you can order a Health Risk Appraisal Computer Program, pick up a fingertip pulse monitor or order in-home gym equipment. Next, visit new merchant Athlete's Outfitter (GO ATH) for workout wear. Serious swimmers and triathletes will want to speed on over to another new merchant: Barracuda Sports Products (GO BP).

Coming online soon are two new drug stores — Genovese Direct and Pollack-Bailey Pharmacy — that will supply you with a sundry of health-related products and prescriptions. And soon you'll be able to put a little Florida sunshine in your system with fresh fruits and vegetables from another store opening soon, Florida Fruit Shippers.

Visit Berry Scuba (GO BS) for diving needs, or American Outdoorsman (GO AO) for camping and hunting gear. Rodale Press (GO RP) offers a wide selection of newsletters, magazines and books dedicated to your health and fitness. And whatever your hobby — from



backpacking to yachting — CBS Magazines (GO CBS) probably has a publication for you. For vitamins, from A to Zinc, see VitaMenagerie (GO VM). And be sure to explore stores like Sears, Roebuck & Co. (GO SR) and American Express Merchandise (GO AXM), where you'll discover even more products to meet your fitness needs.

You'll also find several merchants with products for your financial well-being. Max Ule & Co. (GO MU) offers online discount brokerage services. New merchant Equitable Life will feature Self Sketch, an online quiz revealing the financial services that fit your lifestyle. And EF Hutton (GO EF) offers Huttonline, a service allowing you to monitor your accounts, the stock market and the world of investments, all from your computer.

You can request a Gold Preferred MasterCard application from Colonial National Bank (GO CN), or order information on IRAs, life insurance and liability insurance from Metropolitan Life (GO MET).

A variety of books, magazines, newsletters and journals, all with specialized up-to-the-minute information and advice designed to keep you in the black, are available online. Order free catalogs and investment information on emerging growth companies, penny stocks and more from Select Information Exchange (GO SI). Or visit Mall merchant NewsNet (GO NN) for information on over 250 speciality business newsletters. You'll find *The Wall Street Journal, Barrons* and *The National Business Employment Weekly* at Dow Jones & Co. (GO DJ). Or order *The Harvard Business Review* from their online store (GO HB). Finally, at McGraw-Hill (GO MH) you'll select from the best in business books.

For all of your health, fitness and financial needs, type GO MALL.

— Cindy Morgan

AUTO SHOP

BU Buick

BOOK BAZAAR

WB Waldenbooks
RP Rodale Press
MH McGraw-Hill
BB Bantam Books

FINANCIAL MART

MET Metropolitan Life
CN Colonial National Bank
MU Max Ule & Co.
SI Select Info. Exchange
EL Equitable Life

LEISURE CENTER

MV Magic Castle Video
AO American Outdoorsman
SB Stark Brothers Nursery
BS Berry Scuba Co.
HF Carolina Health/Fitness

MERCHANDISE MART

KO Eastman Kodak Co.
SR Sears, Roebuck & Co.
AC Landmark Contracts
FP Just For Fun
PB Pocklington Bros.

NEWSSTAND

ME EBSCO Magazine Entree
CBS CBS Magazines
CW CW Communications
DJ Dow Jones & Co.
US USA Today
RP Rodale Press
ME EBSCO Magazine Entree

ONLINE CONNECTION

EF E.F. Hutton
VL VideoLog Electronics
NN NewsNet
HB Harvard Business Review
OA Official Airline Guides

PERSONAL COMPUTER STORE

MO Misco Computer Supplies
SR Sears, Roebuck & Co.
MC MCTEL Telecommunications
CS Commodore Business Machines
MM Marymac Industries Inc.
HTH The Heath Corp.
CE Computer Express
BI Borland International
GE Grolier Software

RECORD EMPORIUM

RW Record World
RC RCA Record Clubs

SPECIALITY BOUTIQUE

BL Bloomingdale's by Mail
HH Hobbit Hole/Wyandotte Wines
VM VitaMenagerie
AXM American Express Shopping
LNX Lenox of Fairfield

TRAVEL AGENCY

AF Air France
AA American Airlines
WL Worldwide Exchange
HS The Homestead

NEW MALL MERCHANTS

Athlete's Outfitter
Baracuda Sports
French Films on Video
Icon Review
Wayside Systems

THE ELECTRONIC MALL™

The Mall is faster than the family car!

The Mall is faster than walking to the garage. The Mall is faster than trying to avoid traffic. The Mall is faster than trying to find a parking spot. (Or trying to find your car in the parking lot!) The Mall is fast, fun, and dependable. Something you can't always say about the family car!

A service of CompuServe and L.M. Berry & Co.

To open a Mall store call 212/223-2424

How To Access CompuServe By Radio

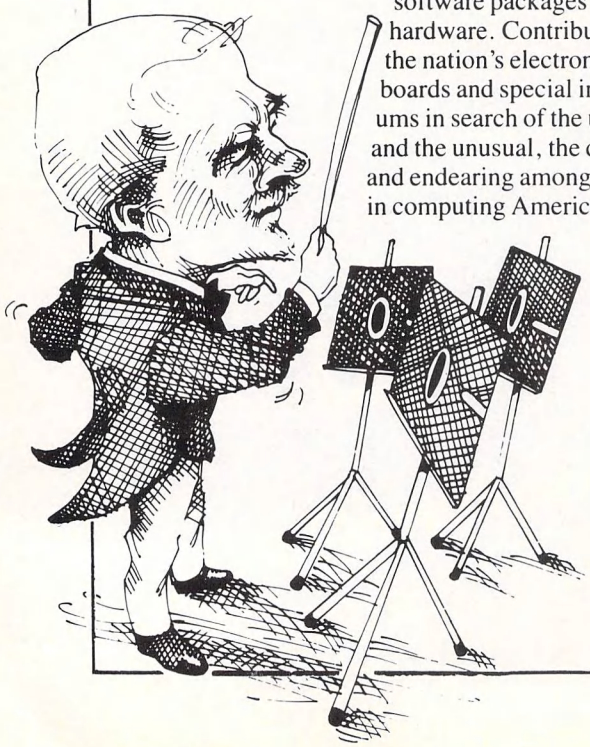
Introducing the Online Computer Connection . . . a radio magazine with features on computers and computing, brought to you by CompuServe—the country's leading microcomputer communication network.

Floppy Disk Jockeys

Contributors to the Online Computer Connection include the same editorial staff that produces Online Today magazine and Online Today Electronic Edition and features reporters, reviewers, interviewers and columnists from throughout the computer industry press. They contribute to a fast-paced, five-minute news capsule heard daily on selected stations and edited with the computer user foremost in mind.

Inside Jazz™, Symphony™, Music Construction Set™ and More

Besides computer consumer reports and product and book reviews, The Online Computer Connection covers the activity of groups using specific software packages and computer hardware. Contributors monitor the nation's electronic bulletin boards and special interest forums in search of the unique and the unusual, the daring and endearing among events in computing America.



Meet Today's Top Artists—From Cottage Tinkerer to Corporate Titan

Incisive interviews with business personalities, big and small, bring authority to our analyses and vision to our forecasts. Whether discussing the creation of software or the retention of market share, Online Computer Connection guests illuminate topics shaping the microcomputer industry.

Request Lines are Open for CompuServe Subscribers

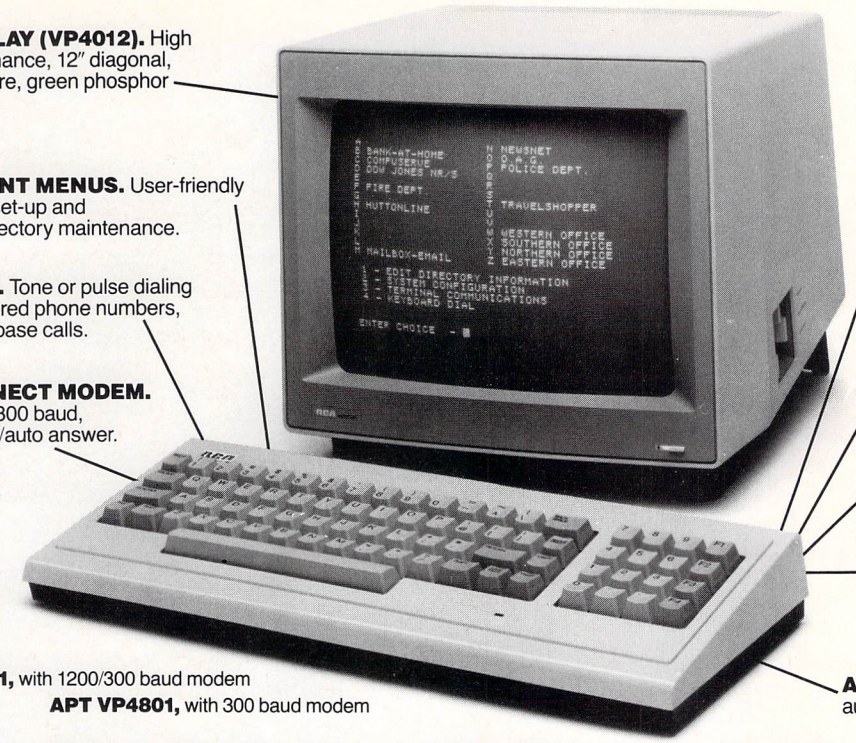
Listeners who also subscribe to the CompuServe Information Service can visit an online special interest group organized to support the show. Join this interactive forum to discuss features from the show with other listeners, retrieve transcripts, or make suggestions about future stories.

Turn on the Online Computer Connection for a timely look not just at the movers and the shakers, but the moved and the shaken within our emerging computer society. And tune in the show's CompuServe forum with a GO OCC command at any ! prompt.

Jazz™ and Symphony are trademarks of Lotus Development Corporation. Music Construction Set is a trademark of Electronic Arts, Incorporated.

Online COMPUTER CONNECTION

You don't need a computer to talk to another computer.



DISPLAY (VP4012). High performance, 12″ diagonal, non-glare, green phosphor screen.

RESIDENT MENUS. User-friendly terminal set-up and phone directory maintenance.

AUTO DIAL. Tone or pulse dialing of up to 26 stored phone numbers, voice or data base calls.

DIRECT CONNECT MODEM. Built-in, 1200 or 300 baud, originate/answer/auto answer.

VIDEO OUTPUT. Selectable 80 or 40 characters × 24 lines on standard monitor.

MEMORY BACKUP. Minimum 48-hour storage of directory, log-on and other parameters without plug-in power. No batteries required.

FUNCTION KEYS. User programmable or downloadable from host computer.

TV OUTPUT. Displays 40 characters × 24 lines on Ch. 3/Ch. 4 of standard TV set.

AUTO LOG-ON. Enters information automatically after auto dialing.

APT VP5801, with 1200/300 baud modem
APT VP4801, with 300 baud modem

The RCA APT (All-Purpose Terminal). Now with built-in 1200 baud modem for greatly expanded data communications capabilities.

For business, professional and personal data communications, you'll find more user-friendly features and greater communications capabilities in the RCA APT than in other terminals selling for up to three times the price.

The new APT terminals are ideally suited to multi-data base time sharing by telephone line, and dedicated, direct computer-connected applications. They feature menu-controlled operation and a programmable "personality" to match specific communications requirements for your data bases.

A single keypress can dial a stored number, send the log-on sequence to the host computer, and return terminal control to the user. Password protection prevents unauthorized access to designated numbers. APT can also be used as an autodialer for voice communications.

The APT VP5801 terminal with 1200 baud modem lists for $798. The APT VP4801 terminal with 300 baud modem lists for $498. The data display monitor alone (VP4012) is $199 list.

Quite simply, matching features with price, there are no other professional quality terminals available today that can do as much at such low cost.

For more information—or to order—call 800-RCA-0094. In Penna., call 717-295-6922. Or write for fully descriptive brochure to RCA Data Communications Products, New Holland Avenue, Lancaster, PA 17604. OEM and dealer pricing available.

OTHER FEATURES

RS232C port for direct computer connections at data rates to 9600 baud, or for connecting high speed modems and other accessories. Parallel printer port for hard copy. Numeric keypad can dial phone numbers not in terminal directory. Built-in speaker with adjustable volume control for audio monitoring of phone line. Automatic screen blanking to reduce possibility of burn. Briefcase size: 17″ × 7″ × 2″. Weight: under 4 lbs.

800-RCA-0094

RCA
Data Communications Products

Circle 6 on the Reader Service card or GO EBB.

Electronic Mail

For Wendy's Kind of Communications Needs

The rapid rise to popularity and predominance of Wendy's International Inc. among its competitors in the quick-service restaurant industry has been a study of cause and effect. The cause has been the organization's commitment to providing its customers with quality food. The effect has been a corporate growth rate never before achieved in the industry.

Presently the fourth largest restaurant chain in the world, Wendy's opened its first store for business in Columbus, Ohio, in 1969. Since then, Wendy's has grown to become a multi-billion dollar, worldwide organization employing over 115,000 in restaurants in all of the 50 states and in 14 international markets.

Wendy's expanded at such a pace that the company had 2,000 stores in operation after only 11 years. Its major industry competitors, McDonald's and Burger King, took 17 and 24 years respectively to reach this level of market penetration.

And today, despite its history of vigorous expansion and estimates that it serves over 2 million customers each day, Wendy's has been rated as the number one hamburger chain in the country for the past four years.

Another important area where quality is making a difference at Wendy's is in its electronic mail system for organizational communications. The company uses InfoPlex[R], a private electronic mail service from CompuServe, to more swiftly, reliably and cost-efficiently dispatch and respond to company communications between a growing number of internal and external operating divisions, facilities and vendors.

/ret/pau

Message 440-259
Subj: Overlays

| ***TO BE COMPLETED BY SSP***
|
| RECEIVED _____
| Date/Time Initials
|
| PROJECT NUMBER _____
|
| PROJECT TITLE _____
|_____

SSP PROJECT REQUEST FOR NEW/EXISTING STORE EQUIPMENT

DATE 7-17-85 REQUEST ORIGINATOR

REQUESTOR PHONE ( )
Area Code/Number/Ext

STORE NUMBER
Area/Store Number

STORE ADDRESS
Number/Street

City/State/Zip Code

STORE PHONE

Area Code/Number

SHIP TO: (STORE ADDRESS)
Company/ATTN:

Number/Street

City/State/Zip

ATT: STORE SUPERVISOR

PROJECTED OPENING DATE:

*** EQUIPMENT REQUEST ***

MANUFACTURER	MODEL NUMBER	QUANTITY
ACME	LUNCH OVERLAY	2
_____	_____	_____
_____	_____	_____
_____	_____	_____

SPECIAL REQUESTS/FEATURES

PLEASE SHIP A.S.A.P. _____

Sample of an electronic form created by Wendy's International to request new and existing equipment.

CompuServe's InfoPlex can be thought of as a categorized collection of electronic mailboxes residing in CompuServe's host computer centers in Columbus. Users are assigned individualized passwords and codes. This bi-level security system helps ensure the service is used only by predesignated, pre-authorized participants.

Wendy's first began using computer-based services from CompuServe in April 1984. According to Nancy Johnson, microsystems specialist in Wendy's information systems group, two kinds of substantial cost savings have resulted from the use of "WendMail," the company's internal moniker for its electronic mail application.

Johnson explains, "As WendMail is utilized to transmit the same kinds of information routinely, such as is necessary with weekly reports from the area offices, we reduce costs versus alternative communications methods such as the telephone and mailings. When we use our system to transmit information that is of a more spontaneous nature, and speed in sending and receiving the data is important, the savings are even more substantial. Before WendMail, the only way

Where to Tune in Your Area

More stations plug into the Online Computer Connection every week. Look for the most current list in CompuServe's OCC Forum, or if you are not a subscriber, call CompuServe to find out the nearest station carrying the program. Watch local broadcast listings for news about the show. If the show does not air in your area, call your local station and have them contact Jameson Broadcast (614) 476-4424 for more information.

AZ, Phoenix
KFYI-AM
910 kHz

AZ, Tucson
KTUC-AM
1400 kHz

CA, Riverside
KGUD-AM
1490 kHz

CO, Denver
KDEN-AM
1340 kHz

DC, Washington
WNTR-AM
1050 kHz

DE, Wilmington
WILM-AM
1450 kHz

FL, Orlando
WKIS-AM
740 kHz

HI, Honolulu
KHVH-AM
990 kHz

IN, Indianapolis
WENS-FM
97.1 mHz

KS, Kansas City
KXTR-FM
96.5 mHz

KY, Paducah
WKYX-AM
570 kHz

MA, Springfield
WLDM-AM
1570 kHz

MD, Baltimore
WITH-AM
1230 kHz

NC, Charlotte
WGSP-AM
1310 kHz

NC, Raleigh
WPTF-AM
680 kHz

NH, Keene
WKNE-AM
1290 kHz

NY, Albany
WQBK-AM
1300 kHz

NY, Buffalo
WJJL-AM
1440 kHz

NY, Ellenville
WELV-FM
99.3 mHz

OH, Cincinnati
WNOP-AM
740 kHz

OH, Cleveland
WJW-AM
850 kHz

OH, Columbus
WCOL-AM
1230 kHz

PA, Philadelphia
WIP-AM
610 kHz

SC, Charleston
WKCN-AM
910 kHz

TN, Johnson City
WETB-AM
790 kHz

TX, Houston
KLEF-FM
94.5 mHz

UT, Ogden
KLO-AM
1430 kHz

VA, Richmond
WRVA-AM
1140 kHz

WS, Milwaukee
WISN-AM
1130 kHz

The Online Computer Connection is produced by Jameson Broadcast with offices in Washington, D.C. and Columbus, Ohio.

NEW PRODUCTS

Florida Forum Adds Weekly Travel Conference

The Florida Forum now has a weekly travel conference and trivia game every Tuesday at 10 p.m. EDT.

The forum is designed to let CompuServe users communicate with Florida residents and business people for personal information on the area. In the weekly conference, you can speak with a travel professional in Florida. The conference usually ends with a Florida trivia game. GO HOM-27

Wonders of Disney Program

Discover Orlando has added "The Wonders of Disney," a program to give teen-agers the opportunity to go backstage of many DisneyWorld attractions and register for courses in creative arts, entertainment, energy and ecology. Teen-agers may study with the Disney illustrators, go backstage of the energy exhibit or study innovative ecology programs. GO ORL

Legislation Database in *Online Today*

Online Today Electronic Edition has added a computer legislation database covering bills pending in the U.S. House of Representatives, those pending in the U.S. Senate and those on the president's desk.

The bills cover such topics as computer fraud, systems protection, and the impact of communications technology on personal privacy. The information in each bill is written in a form suitable for downloading. GO OLT-3000

Travelshopper's Expert Mode

Travelshopper, the airline information and reservation program, now has an operating mode for experienced users.

With "expert mode" users may make all entries on a single line, eliminating multiple screen displays and prompts, while reducing connect time. Using the semicolon as a delimiter, users can make entries in a single format as travel professionals do.

For example, if you need available flights for two people traveling from New York to Los Angeles on July 3, the single entry format would be A;NYC;LAX;3jul;9a;2. This enables you to bypass the multiple screens and a display of availability appears immediately. GO TWA

ICCA Forum Open to the Public

CompuServe subscribers can now obtain information about the Independent Computer Consultants Association, read about professional and ethical issues facing computer consultants and discuss political issues affecting the information processing industry.

All CompuServe users may become members of the ICCA Forum, even if they do not belong to the ICCA. Forum members automatically have access to four sections: "General and Help," "About the ICCA," "The Profession" and "Political Issues." GO PCS-74

Softex has C-64 ReRun Programs

The Softex database now offers ReRun programs for the Commodore 64. These programs, published in Run magazine as line listings, are now available for CompuServe subscribers to download from the Softex database. GO SOFTEX

Answers From Customer Service

Q: I wasn't aware that I had a credit limit on my account. Can you give me more information on why I have a credit limit and how I can raise it?
A: Credit limits are established for all CompuServe Information Service subscribers, except for those subscribers utilizing the MasterCard or VISA billing option. Credit limits are established so that subscribers can monitor their monthly usage.

Initially, credit limits are set at $300 per month. You can increase your credit limit if you have been a subscriber for at least three months and have a good billing history. To request a credit limit increase, call our Customer Service Department at 800/848-8990 within the contiguous United States and outside Ohio, or 614/457-8650 outside the contiguous United States and inside Ohio.

Q: When will I receive my Checkfree notice?
A: Checkfree notices are mailed to Checkfree subscribers on the first Tuesday of each month. However, your billing information, including the current balance on your account, is available online at any time. To access this information, enter GO MONTH at any prompt.

Q: I noticed my MasterCard is due to expire soon. I haven't received my new credit card, but when I do, I want to provide CompuServe with my new credit card information. How can I give you the new information? Will my service be interrupted?
A: Each time you access CompuServe, 30 days before the expiration date of your credit card, you will be notified that your credit card is about to expire. You will be given the opportunity to provide your new credit card information at that time.

Because we realize that your new credit card may not always reach you on or near the expiration date of your old credit card, you are also given 90 days after the expiration date to enter your new credit card information online. If your new credit card information is supplied within this time-frame, service will not be interrupted.

If, for some reason, your new credit card information is not provided 30 days prior to the expiration date or 90 days after the expiration date, service will be interrupted. You should call our Customer Service Department to supply us with your new credit card information. Once your new information is processed, your service will be restored.

Q: As a credit card subscriber, will I receive a monthly statement of my charges from CompuServe?
A: Credit card subscribers are not sent a monthly statement of their charges. Instead, your CompuServe charges will appear on your monthly credit card statement. However, you may review your billing information online at any time by entering GO MONTH at any prompt.

Q: If I do not use the service, am I charged?
A: The CompuServe Information Service does not have a monthly minimum charge — so, if you do not access, you will not be charged. The Executive Service Option has a $10 monthly minimum charge.

— *Tammy Quinlan, Dan Flynn, Ellen D'Andrea, Ron Hall, Dave Smith*

Changing Your Password

The CompuServe Information Service urges its customers to change their password(s) at least once a month.

The password should be a minimum of eight characters composed of two unrelated words separated by a symbol, for example: HOUSE*MAGNET.

It never hurts to be safe, but almost always hurts to be sorry. By changing your password frequently, you eliminate the risk of someone else illegally using your account.

What's Going On???

If you want to know what's going on around CompuServe, check into the *Electronic Edition* of *Online Today*. Here you'll find constantly revised news for and about the CompuServe community. GO OLT from any prompt and choose "CompuServe Update" from the main menu.

ONLINE TODAY
ELECTRONIC EDITION

Update-d Gift of Time

Online Today offers subscribers the chance to write a 200-word essay on how they use CompuServe's Information Service.

Your essay should be typed double-spaced. Send it to *Online Today*, CompuServe Incorporated, 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, OH 43220, or by an Email message to 70003,1661. Please include your full name, address and User ID number.

Should we use your column, you will receive 10 hours of standard service connect time (a $60 value) and a byline.

Professor Creates Network Through EasyPlex

I am a university professor, and I have used CompuServe's electronic mail, EasyPlex, to establish a network of graduate students. It enables them to develop contacts throughout the country, allows current students to ask questions of graduates in different fields and provides a network of contacts they can use when they complete their studies. The network also helps the university (and myself) keep in touch with our alumni and enables the alumni to communicate with each other.

Each year, I distribute my CompuServe User ID number to graduate students and they send their names and addresses every year through EasyPlex. One of my students maintains this list and also responds to requests for contacts in certain subjects or geographic areas.

The students all enter the same fictitious city name into the User Directory on CompuServe. Then, we use the city name to search for the User ID numbers of fellow students or graduates. They can then follow up with an EasyPlex message.

We are only in our second year of this project, but so far it is going well. I am still waiting to hear from a couple of students who are working at rural missionary schools in South America and would appreciate any suggestions on a cost-effective way for them to access CompuServe.

Warren Williams
Eastern Michigan University
Ann Arbor, Mich.

Super Disk™ Diskettes

Now...Diskettes you can swear by, not swear at.

Lucky for you, the diskette buyer, there are many diskette brands to choose from. Some brands are good, some not as good, and some you wouldn't think of trusting with even one byte of your valuable data. Sadly, some manufacturers have put their profit motive ahead of creating quality products. This has resulted in an abundance of low quality but rather expensive diskettes in the marketplace.

A NEW COMPANY WAS NEEDED AND STARTED

Fortunately, other people in the diskette industry recognized that making ultra-high quality diskettes required the *best* and newest manufacturing equipment as well as the best people to operate this equipment. Since most manufacturers seemed satisfied to give you only the everyday quality now available, an assemblage of quality conscious individuals decided to start a new company to give you a new and better diskette. They called this product the *Super Disk* diskette, and you're going to love them. Now you have a product you can swear by, not swear at.

HOW THEY MADE THE BEST DISKETTES EVEN BETTER

The management of *Super Disk* diskettes then hired all the top brains in the diskette industry to make the *Super Disk* product. Then these top bananas (sometimes called floppy freaks) created a new standard of diskette quality and reliability. To learn the "manufacturing secrets" of the top diskette makers, they've also hired the remaining "magnetic media moguls" from competitors around the world. Then all these world class, top-dollar engineers, physicists, research scientists and production experts (if they've missed you, send in your resume to *Super Disk*) were given one directive...to pool all their manufacturing know-how and create a new, better diskette.

HOW SUPER DISK DISKETTES ARE MANUFACTURED

The *Super Disk* crew then assembled the newest, totally quality monitored, automated production line in the industry. Since the manufacturing equipment at *Super Disk* is new, it's easy for *Super Disk* to consistently make better diskettes. You can always be assured of ultra-tight tolerances and superb dependability when you use *Super Disk* diskettes. If all this manufacturing mumbo-jumbo doesn't impress you, we're sure that at least one of these other benefits from using *Super Disk* diskettes will:

1. TOTAL SURFACE TESTING - For maximum reliability, and to lessen the likelihood of disk errors, all diskettes must be totally surface tested. At *Super Disk*, each diskette is 100% surface tested. *Super Disk* is so picky in their testing, they even test the tracks that are in between the regular tracks.

2. COMPLETE LINE OF PRODUCTS - For a diskette to be useful to you and your computer, it must be compatable physically. *Super Disk* has an entire line of 5¼-inch diskettes for your computer.

3. SPECIALLY LUBRICATED DISK - *Super Disk* uses a special oxide lubricant which is added to the base media in the production of their diskettes. This gives you a better disk drive head to media contact and longer head and disk life.

4. HIGH TEMPERATURE/LOW-MARRING JACKET - A unique high temperature and low-marring vinyl jacket allows use of their product where other diskettes won't work. This special jacket is more rigid than other diskettes and helps eliminate dust on the jacket.

5. REINFORCED HUB RINGS - Standard on all *Super Disk* mini-disks, to strengthen the center hub hole. This increases the life of the disk to save you money and increase overall diskette reliability.

6. DISK DURABILITY - *Super Disk* diskettes will beat all industry standards for reliability since they will give you more than 75% of the original signal amplitude remaining even after an average (Weibul B-50) of 30 million passes. They are compatible with all industry specifications as established by ANSI, ECMA, ISO, IBM and JIS.

7. CUSTOMER ORIENTED PACKAGING - All *Super Disk* disks are packaged 10 disks to a carton and 10 cartons to a case. The economy bulk pack is packaged 100 disks to a case without envelopes or labels.

8. LIFETIME WARRANTY - If all else fails, remember, all disks made by *Super Disk* Inc., have a lifetime warranty. If any *Super Disk* diskette fails to meet factory specifications, *Super Disk* Inc. will replace them under the terms of the *Super Disk* warranty.

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5¼" DSDD Soft Sector w/Hub Ring	**6491-ZE**	0.94
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Cambridge, MA 02139
617/577-2000 or 800/225-1618

Computers: IBM PC, PC-XT, PC-AT and PC Portable; Compaq, Compaq Plus and Compaq Deskpro. Models also available for DEC Rainbow 100, Rainbow 100 Plus and Professional 300 series; AT&T Personal Computer; Apple II Plus and IIe.
Operating Systems: PC-DOS or MS-DOS version 1.1 or higher; versions available for DEC DOS and Apple DOS.
Media: PC version requires one double-sided diskette drive.
Copy Protection: None; PC version software may be copied to and run from working diskettes or hard disk with no special requirements.
Required Peripherals: PC model requires IBM Color/Graphics Monitor Adapter or equivalent; IBM Asynchronous Communications Adapter or equivalent RS-232C serial input/output adapter.
Other Requirements: Minimum 256K RAM for PC version.
Optional Items: Additional diskette drives, hard disk or electronic disk; additional memory.
System used for test: 640K Compaq Deskpro (Model 2) with two 360K diskette drives, 20MB IOMEGA Alpha-10 Cartridge Drive Subsystem (Bernoulli Box), STB Systems' RIO Plus II multifunction card, Amdek Color 700 monitor; running IBM PC-DOS 2.10.
Suggested Retail Price: $1,799

Reviewed by Ernest E. Mau

Anyone who's had to reproduce computer screen images photographically knows it's no trivial task. Cameras pointed at the screen don't do a good job, cameras mounted in "hoods" give usable results for only a few needs, and specialized image recording equipment is expensive.

Polaroid's Palette Computer Image Recorder is a comparatively low cost hardware and software system capable of meeting the imaging needs of all but the most critical users and applications.

The Palette system consists of several interrelated components. The recorder is a box 7¾ inches wide, 5¾ inches high, and 13 inches long. It houses a small internal black-and-white cathode ray tube, a rotating color filter assembly and the components necessary to control them. Two film subsystems and associated mounting adapters with lenses are provided: one is a pack film holder for Polaroid Type 669 color print film, and the other is a 35mm camera body with an autowinder. All necessary cables, a 35mm AutoProcessor for Polaroid film and a slide cutting and mounting device are included, as is the software to run the system.

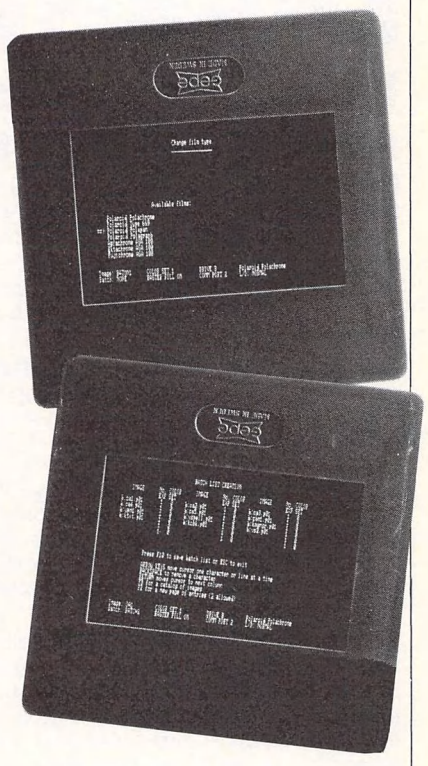
Hardware installation requires only simple tasks like assembling the 35mm camera body, autowinder and mounting bracket, securing it to the recorder and connecting a shutter release cable to the recorder. Two connections are required between the recorder and computer: a serial interface cable to COM1 or COM2 and a video connection to the computer's composite video output jack. The computer's RGB monitor output is not used and may remain connected to a monitor. If the computer already has a composite monitor, it's reconnected through the Palette recorder.

Software installation involves copying the distribution diskette to a working diskette or hard disk and running the program. The setup includes designating the drive for saving and retrieving files with recorded images, selecting a film type, and, the first time only, running a menu selection to fine tune the recorder's video threshold.

Palette uses the principle of additive colors, in which any perceivable color can be produced by adding red, green and blue primaries in proper proportions. Palette breaks an image down to fundamental red, green and blue components. Each is sent to the recorder's black-and-white tube for a specific time during which one of three color filters is between the tube and film. The complete image is built by multiple exposures on a stationary film frame, forming whatever colors and hues are needed.

The key to successful image reproduction is the software. Two approaches are possible. First, applications programs that specifically support the Palette can be used. Numerous packages, primarily graphics types, are equipped with software drivers for the Palette. For example, Decision Resources' Sign-Master and Chart-Master can output directly to the Palette without intermediate steps or file storage. A list of programs having Palette drivers is available from Polaroid.

The other approach uses programs provided with the Palette to save



display snapshots as disk files for later exposure. A 15K memory-resident program called PSAVER may be called by touching a user-selected key combination, say Shift-PrtSc. It opens an on-screen window from which function keys activate picture-saving operations. One interesting key is F5. It alters the type of image saved and can even save a color screen as a black and white image suitable for reproduction in magazines where color is not available. Once the image type is set, F1 is tapped, a filename is given, and the image is saved in that file. Both text and graphics screens can be captured this way.

A separate Palette program controls actual exposures of the image files. This program is loaded when needed and is quite versatile. Among other things, the film type can be selected, thus setting exposure times for the recorder. It handles Polaroid Type 669 print film as well as six types of slide film, namely Polachrome, Polapan, Polagraph, Agfachrome, Ektachrome and Fujichrome. The Polaroid films have the advantage of being "instantly" developed in the AutoProcessor provided, and Polapan and Polagraph give continuous-tone and high-contrast black-and-white positive transparencies. The other films require conventional commercial processing.

This program can expose one image at a time, or it can "batch" images in se-

quences. Using the 35mm camera body with the autowinder, the program can expose a whole roll of 36 images without further intervention. For the half hour or so it takes, the user can be doing other things.

Another useful capability allows altering colors to customize images. For example, what appeared on the monitor as yellow could be changed to white, orange, light green, purple or whatever color a user prefers. Seventy-two colors are available in the Palette colorkey, and each color in an image can be manipulated so the whole picture can be totally redesigned. Other capabilities include lightening or darkening exposures over a seven-step range and activating or deactivating raster filling to improve image quality.

Capturing images on disk and later exposing them worked well for most applications but not all. Programs using high-resolution instead of medium-resolution graphics screens tended to be problems, and a few programs like Volkswriter Scientific wouldn't reproduce adequately. A few other programs either kept PSAVER from activating or prevented it from responding to its function keys. However, such problems were not common, and about 90 percent of the nearly 200 applications I tried worked nicely.

Images exposed on Type 669 film were like most Polaroid prints. Colors were dull, and the overall appearance was fuzzy and lackluster. With slide films, however, results were crisp and sharp. Slides projected well and were easily viewable. Slides with nothing but text weren't considered suitable for some magazine reproduction, more because of size than image quality. Slides with graphics generally proved satisfactory for magazine reproduction.

I was enthralled by the Palette. It's a practical and economical approach to photographing display screens and should be considered by anyone needing frequent presentation pictures.

Ernest E. Mau, a full-time free-lance writer and Online Today *reviews editor, is based in Aurora, Colo. He is the author of several books and nearly 200 articles on microcomputer products and applications.*

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Media: One or two double-sided disk drives.
Copy Protection: Uncopyable; backup disk supplied with package.
Required Peripherals: None.
Other Requirements: Minimum 192K RAM.
Optional Items: Dot matrix or letter quality printer.
System used for test: IBM PC, DOS 2.0, 320K RAM, one 360K drive, one 10 MB fixed disk, IBM monochrome monitor, Epson RX-80 printer.
List Price: $395

Reviewed by Harry Green

Through many years of struggling with math, I'd have given a lot for a computer and a program like Formula/One. This is the answer to a math duffer's dream: the solutions they left out of the back of the book. To me there have always been two kinds of people — those who decode mathematical mysteries with marvelous insight, and the rest of us who have trouble balancing the checkbook. Formula/One would, I hoped, move me up a notch or two on the scale. It does that, but it can't help with the most difficult part of any problem: expressing it as a formula in the first place. After the formula has been determined and entered in Formula/One's syntax, the program solves problems almost as fast as you can press the calculate button.

Formula/One is divided into worksheets. When the program is loaded, formula and variable sheets are displayed on a split screen. The formula is entered in standard mathematical notation on the formula sheet, and unknowns are automatically displayed on the variable sheet, where you can assign values to them. Input variables are either single values entered on the variable sheet or ranges of values entered in an input list. For example, to solve a linear equation for a value of X between −5 and +20, you either enter the values yourself or direct the program to fill the range with evenly spaced values. When the solve key is pressed, the system creates an output list with a solution for every input variable.

Selecting the plot sheet instructs the system to label the X axis, graph the variables and print the graph or display it on the screen. You can also array the variables in a table with column heads and size specified in an input form. These two functions are easily learned from the tutorial, which takes about an hour and teaches you how to solve basic problems.

The first real test I gave Formula/One was a data circuit throughput problem that uses a complex polynomial. Data circuit design is a matter of optimizing block length for various transmission speeds and circuit error rates. I was able to get the program working from scratch faster than I could have run a single calculation with a hand calculator. Formula/One makes it easy to change any of the input variables (there are 12 of them in this formula) to see what effect the change has on throughput. It either solves the equation for a single block length or, by using an input list, plots a throughput curve.

Formula/One includes a display sheet that displays only certain variables and conceals the complexity of the formula from the operator. For example, a realtor could use the display sheet to show a client how a monthly house payment would change with different assumptions about purchase price, interest rate and down payment.

Formula/One handles simultaneous equations effortlessly. It contains worksheets and formulae for calculating correlation coefficients and for performing multiple regression and other curve-fitting exercises. These are not easy to use, however. When you attempt them, you encounter Formula/One's greatest weakness: its manual falls far short of explaining how to use all its functions. The simple examples in the manual are easy to follow, but, for the more complex examples, the manual's author takes shortcuts that leave all but the hardiest mathematicians confused. Unfortunately, poor documentation is all too common and has undoubtedly consigned some otherwise excellent software to obscurity, at least until an enterprising author rescues it with a plain English book of step by step instructions.

Will Formula/One make a mathematician out of a numerophobe? Hardly. For one thing, the program solves only problems where values have been assigned to variables. It will not solve the mind-numbing college algebra equations that call for restating a problem in terms of its unknowns. Nor will it handle imaginary numbers. In other words, if the solution to your problem is another formula, forget it. It also is unable to provide more than one answer to a problem with multiple solutions. This phenomenon, which always was the bane of my existence, is common with quadratic equations. Formula/One won't do everything you encounter in a text book, but for what it is designed to accomplish, providing numerical solutions to complex equations, the program is highly recommended.

Harry Green is a free-lance writer from Portland, Ore. He is author of Automating Your Office *and* Local Area Networks. *A forthcoming book,* Handbook of Telecommunications, *will be published by Dow Jones-Irwin in 1985. His CompuServe User ID number is 70007,431.*

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KnowledgeMan

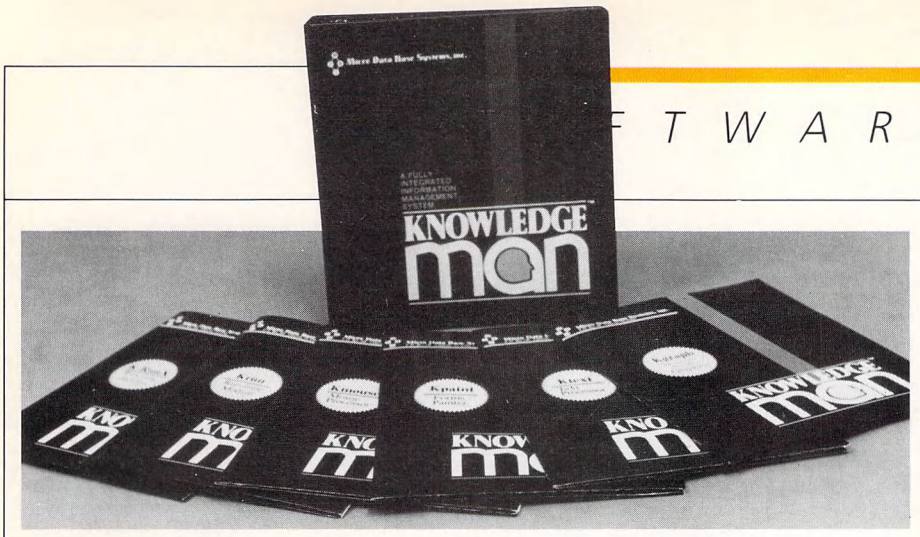
Version 1.07 Does Almost Everything

Micro Data Base Systems Inc.
P.O. Box 248
Lafayette, IN 47902
317/463-2581

Computers: IBM PC and compatibles.
Operating Systems: PC-DOS, MS-DOS and CP/M-86.
Media: Minimum of two double-sided floppy drives required or one drive and 500K of hard disk space (recommended).
Copy Protection: None; may be run from backup copies or hard disk with no restrictions.
Other Requirements: Minimum 192K RAM.
System used for test: 704K Heathkit 150PC computer with a high-resolution color monitor and two double-sided, double-density drives running MS-DOS 2.13 and PC-DOS 2.10. Radio Shack DMP2100P and Epson MX-80 printers with 128K Microfazer printer buffer.
List Prices: KnowledgeMan DBMS and spreadsheet $500; K-Graph $225; K-Text $175; K-Paint $100; K-Mouse (not tested) $100; K-Report (not provided for review) $225; Discovering KnowledgeMan (book) $19.95

Reviewed by Hardin Brothers

In sheer bulk alone, KnowledgeMan is impressive. The package I received included six disks with over 830K of program code and nine pounds of documentation. But KnowledgeMan's bulk is less impressive than its completeness. I find



it hard to talk about this program in anything less than superlatives.

KnowledgeMan is an unusual and powerful database management system. With it, you can manipulate information in various ways, recall any or all information with a few commands, perform simple statistical analyses of any data subsets you wish, and store data in an encrypted form accessible only through KnowledgeMan's system of passwords. KnowledgeMan also can read and write data in forms that most other programs can use.

Also, KnowledgeMan is a spreadsheet that can handle up to 255 rows and 255 columns with a wide variety of functions and commands. It's one of the most powerful spreadsheets I've used.

Third, KnowledgeMan is a structured programming language designed to take advantage of other KnowledgeMan capabilities. You can write complex procedures that can be run by a single command, thereby customizing KnowledgeMan to do almost anything imaginable with stored data.

KnowledgeMan also is an input and output manager. You can create forms that facilitate gathering information and displaying, printing or saving information in a disk file.

With the optional K-Graph program, KnowledgeMan becomes a graphing utility that can create three kinds of bar graphs, area graphs, pie charts of various types, scattergrams, line graphs, function graphs, high-low-close charts and free-form figures.

Another optional component, K-Text, turns KnowledgeMan into a fairly complete word processor, text processor and text formatter. Although the text processor is missing such amenities as underlining and automatic footnoting, it's capable of adding graphs, sections of a spreadsheet and parts of KnowledgeMan databases to a document. The formatter does include such niceties as headers and footers, page numbering in Arabic or Roman style, line justification, centering, mail-merge and calculation capabilities.

Two other optional utilities, K-Paint and K-Mouse, allow you to define input and output forms interactively and to use a mouse for many KnowledgeMan activities. An optional component not provided for review allows interactive design of report forms.

Except in the forms-painting utility, KnowledgeMan has no menus. You must invest some time in learning its commands. The data-handling and spreadsheet functions alone have 80 commands, many with complex options, and the KnowledgeMan programming language includes over 200 reserved keywords. At first, all this power seems bewildering. However, you can use many functions with a small subset of the commands and add to your repertoire as you become familiar with the program. Also, you can write frequently used routines in KnowledgeMan's structured programming language and save them as disk files for later use.

KnowledgeMan lets you reconfigure its environment at any time with more than 50 environment variables. These control a wide range of functions, from the choice of wild-card symbols to printer page width and margins or spreadsheet display colors.

But most impressive is KnowledgeMan's ability to handle data. It stores information in disk tables, which you can define and redefine at any time. You can open an unlimited number of tables at once for storing and retrieving information and even use information in one table as a key to finding information in another. You can sort a table by information held in any field and display retrieved data either in report forms that you create or in simple tabular form directly on the screen.

While you may build complex procedures for retrieving data, you also can ask for sets and subsets of information at any time with direct commands. Although the commands are not English sentences, they're all composed of English words that are easy to remember. The combination of programmed retrieval and ad hoc inquiries about data make KnowledgeMan particularly powerful.

Like most programs, KnowledgeMan has limits on the amount of data it can handle. Records must be 65,535 characters or less in length, spread over 1 to 255 fields. A table can hold a maximum of 65,535 records. Numerical accuracy of calculations is limited to 14 digits. However, input and report forms can be any length, and there's no limitation on the length of a program or the number of variables in use at any time. Obviously, you'll be more limited by the storage capacity of your computer than KnowledgeMan's inherent restrictions.

If your computer has sufficient memory, you may build a new copy of Knowledgeman with many of its overlays included; I've added 20 overlays to my copy, which has now grown to 328,000 bytes, so that it never has to stop to read a program from the disk unless I want to use the K-Paint and K-Graph utilities. You may also run any other program or DOS command from inside KnowledgeMan if you have sufficient free memory.

Any program this extensive is bound to have a few bugs, but I found very little to complain about except that KnowledgeMan's text program is incapable of reformating the screen after words have been inserted or deleted. This is the only real flaw in the text processor module, which otherwise is easy to learn and use.

KnowledgeMan requires either two 360K disk drives or a hard disk. Given a large amount of computer memory, the program will work nicely with floppy disks alone, because you'll be able to load the core program and most of its overlays into memory at one time. KnowledgeMan can run with as little as 192K of memory, but will then constantly be loading overlays from disk and running considerably slower.

Although KnowledgeMan is not as friendly as programs with extensive menus, it's among the most powerful and complete data-handling programs available for personal computers. For those who write data applications or work with large databases, KnowledgeMan and its optional components are a superb choice and could be the only software ever needed.

Hardin Brothers is an associate editor of 80 Micro *and a frequent contributor to several other magazines. He is also forum administrator of CompuServe's Writers' and Editors' Special Interest Group (GO WESIG).*

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InteCalc

A 3-D Spreadsheet With Windowing and Graphics

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415/492-9330

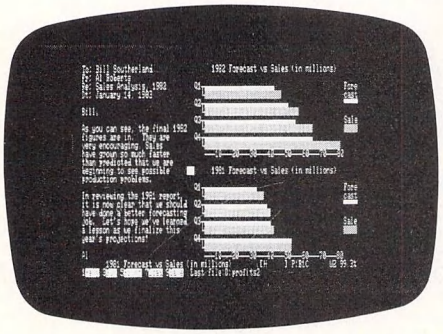
Computers: IBM PC, PC-XT, PC-AT and slot-compatible micros.
Operating Systems: PC-DOS or MS-DOS version 1.1 or higher.
Media: Requires two double-sided diskette drives or one diskette drive and a hard disk.
Copy Protection: None; may be run from backup diskettes or from hard disk without special procedures.
Required Peripherals: Monochrome or color display monitor; printer.
Other Requirements: Minimum 128K RAM.
Optional Items: Additional diskette drives, hard disk or electronic disk; additional memory.
System used for test: 640K Compaq Deskpro (Model 2) with two 360K diskette drives, 20MB IOMEGA Alpha-10 Cartridge Drive Subsystem (Bernoulli Box), STB Systems' RIO Plus II multifunction card, Amdek Color 700 monitor, Epson MX-80 printer; running IBM PC-DOS 2.10 and Compaq MS-DOS 2.02.
List Price: $295; package prices available when bundled with other Schuchardt InteSoft products.

Reviewed by Ernest E. Mau

For years, I've avoided spreadsheets. Partly because I lacked an application and partly because those I examined struck me as little more than cute novelties. A few months ago, I began needing number crunching and reporting, but not until I tried InteCalc did I feel that a spreadsheet could meet my needs.

InteCalc is the spreadsheet of the InteSoft product series and can be integrated with other elements. As a standalone program, it's simply copied to a working diskette or hard disk and run from that copy. There are no special installation steps for choosing colors, installing printers or the like.

When started, InteCalc looks like any other spreadsheet, with its worksheet arranged in rows and columns. What isn't immediately evident is that this program is three dimensional. That is, a single spreadsheet can be 255 columns wide, 255 rows high and 255 pages deep. That's a lot of spreadsheet! It's also extraordinarily useful for things like yearly accounts, where each year can occupy a new page. Given the extensive set of commands provided to handle three dimensions, creating an elaborate, well-structured and unified spreadsheet is surprisingly easy. There's even a command that facilitates repeating formulas, labels, constants and the like from one page to another.



InteCalc has changed my opinion of spreadsheets and has proven to me that they can be more than gimmicks.

InteCalc does not consume memory or disk space for blank cells, unlike many other spreadsheets. Putting data on pages 1 and 255 doesn't take up significantly more space than if the data were on pages 1 and 2, which is important when dealing with the large sheets InteCalc can generate.

Perhaps the most impressive feature is the ability to change viewpoints. A spreadsheet normally is viewed like the pages of a book, but InteCalc also can look at a single row or column down through all pages of that book. Suppose each page has annual account information per quarter for 40 account categories. By changing the view, InteCalc can show quarterly totals of accounts or account totals by quarter over all years. Just imagine a cube from which you may view a slice parallel to any surface.

Add InteCalc's horizontal and vertical windows that view and scroll independently, and data can be manipulated in powerful combinations. Furthermore, InteCalc isn't limited to numeric reporting. Users accustomed to graphic representations, say of the growth or decline of profits and expenditures, will find built-in business graphics attractive. InteCalc can plot bar charts using characters of the user's choice (including graphic characters), complete with labels, legends and even scaling.

InteCalc has all the conventional features, such as adjustable column widths, choices of numeric formatting and others. More than 30 mathematical functions are featured, including average, maximum and minimum values; time functions like day of the week and duration; trigonometric and inverse trigonometric functions; logarithms; and so on. Programmable "EXEC" functions allow the user to create, store and use complex computations, such as amortization or return on investment formulas. A dozen usable EXEC functions are provided with InteCalc, but creating new functions with the 21 program statements available is no more difficult than programming a moderately elaborate calculator.

InteCalc can print to disk, outputting files in ASCII for transfer into a word processor. Surprisingly, it also can read ASCII text files into the spreadsheet itself, combining text, numeric tables and graphics without a word processor. For even more power, say in project consolidation or cost accounting, InteCalc readily accepts data from two other InteSoft products, namely IntePert (project scheduling and critical path analysis) and IntePlan (executive time management).

The manual includes an excellent, easily followed tutorial accompanied by sample files on the diskette. Most people should be able to work through the tutorial in a day (two at the most) and then will have a thorough working knowledge of InteCalc.

Frankly, I was amazed at what InteCalc could do. Next to it, two-dimensional spreadsheets limited to rows and columns on a single page seem trivial and superficial. However, manipulating three-dimensional spreadsheets and altering views may not come easily to some people. A good sense of spatial orientation helps immensely. People who had trouble with school tests that asked students to differentiate or identify drawings of objects rotated in space may have trouble coping with InteCalc.

My only complaint is that InteCalc, like all InteSoft packages, has no safeguards against exiting accidentally. Strike CONTROL-Q by accident, and unsaved work in progress is lost immediately and without any questions.

InteCalc is a superior program, especially for anyone who finds conventional spreadsheets restrictive. It's changed my previously negative opinion of spreadsheets and has proven to me that they can be more than gimmicks.

Circle 16 on the Reader Service card or GO EBB.

MacTerminal

Reaches Out And Touches Other Computers

Apple Computer Inc.
20525 Mariani Ave.
Cupertino, CA 95014
404/996-1010

Computers: Apple Macintosh (including XL) and Lisa 2 with MacWorks.
Operating Systems: Macintosh desktop environment.
Media: Single disk.
Copy Protection: None.
Required Peripherals: Any modem (software has built-in defaults for Apple Modem 300 and 1200).
Other Requirements: None.
Optional Items: External drive or hard disk; printer.
System used for test: 128K Apple Macintosh with internal drive, Apple Modem 300 and Apple Imagewriter printer.
List Price: $99

Reviewed by Joe Farace

MacTerminal is the program most Apple dealers recommend to Macintosh owners who are first-time modem communicators. It's unsurpassed for the ease with which someone who has never used a modem before can purchase an Apple modem with MacTerminal and be comfortably online.

Many people have been using prerelease version 1.0 of MacTerminal for a long time, and Apple finally has officially released version 1.1. Part of the initial success of MacTerminal stemmed from it being the only terminal program available for the Macintosh. That's changing as new telecommunication products are being introduced. With all this new competition, what separates MacTerminal from the rest?

MacTerminal includes two copyable disks with a copying routine on one. Making a copy with just what you need to get started is a good idea since all software needed for connection to Apple's Office System also is included. Using all files leaves only 59K spare on the disk, which isn't enough room for some extra software you might want to download. There's also a special routine for transferring MacTerminal to a hard disk — something that more and more copy-protected software is making difficult.

MacTerminal includes routines for commercial services like CompuServe, and all software defaults are preset for standard information service or bulletin board communications. A novice can log onto CompuServe within minutes, and some free connect time is included. There's also a file for transfers directly from Macintosh to Macintosh.

The bad part of MacTerminal is its documentation. It looks something like standard Apple Documentation, but while opening the manual a little card fell out. This card announced that the manual is temporary, and asked me to fill in the card so Apple can send the real manual when it's available.

Like the best Macintosh software, MacTerminal can be used intuitively. Experienced modem users won't even need to look at the manual, and newcomers just briefly at first. Some parts of the documentation are reminiscent of the Mac and MacWrite manuals and these 10 or so pages will be looked at the most while novices find their ways through the electronic maze of telecommunicating.

MacTerminal supports both XMODEM and file (text) data transfer methods. If the information service or bulletin board supports the error-checking XMODEM protocol, use it! Downloading with MacTerminal and XMODEM allows the file being transmitted to be stored directly on disk. During downloads, the Mac displays a speedometer-style graphic that shows exactly what percent of a file has been transferred. For long downloads, I go about my work at the office, checking the screen occasionally to see how close to finished the transfer is.

The "file" method just records information onto the MacTerminal document you're using. You'll have to transfer that file by copying it onto the Clipboard and pasting it into another newly created document. At that point, if there's an application program for that file on the same disk, you'll be able to open and use the downloaded file. That's not the quickest way to work. Fortunately, there are public-domain, "freeware" and "shareware" programs that load a text file directly.

Uploading can become complicated. With one local bulletin board, I have a limited time available to pull down the appropriate window, click the file or insert another disk. I'm not always fast enough and it sometimes "times out" on me, but experience with the software has greatly lessened the chances of timeouts. Uploading would be more convenient with two drives, since fewer disk swaps would be needed even for small files.

When preparing text for uploading, keep in mind that prerelease versions of MacWrite beyond 2.2 can cause problems. The disk-based (unofficial) release of MacWrite counts each carriage return as a paragraph and could cause the error message "too many paragraphs." A 128K Mac is limited to 500 paragraphs, while a "Fat Mac" increases the limit to 2,000 paragraphs. Use the tab key to conserve carriage returns. Be advised that, as of this writing, version 2.2 is the only official version of MacWrite, and I know from experience that versions 3.4, 3.8 and 3.9 are buggy.

Don't think that using MacTerminal is difficult. It isn't. In fact, the ease of use makes me recommend this program to the user who's new to telecommunicating. You can be online within minutes of opening the box and connecting the modem. MacTerminal may not be for the sophisticated user, but it's more than adequate for the rest of us.

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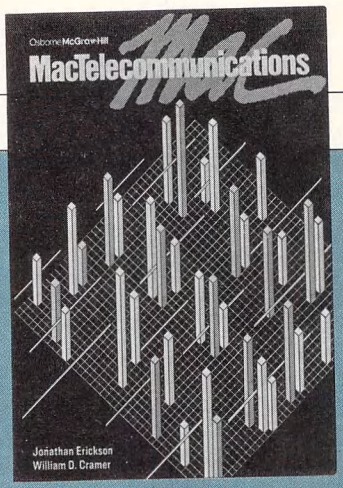
MacTelecommunications

By Jonathan Erickson and William D. Cramer
Osborne/McGraw-Hill, 1985
180 pages; $16.95 (softcover)
Reviewed by James Moran



Readers will discover that many things change and stay the same.

The Macintosh, as most owners know by now, is a machine that communicates to the standards of a different interface. One look at the communications port says it all: a nine-pin connector. Now everyone knows that a twenty-five pin RS-232C connnector is what connects a microcomputer to the rest of the world. So why does the Macintosh have to be different?

A lot about the Mac is different and although that difference includes some unusual — for microcomputers — cabling requirements, owners will be pleased to know that telecommunications for the Mac is really not that much different from the rest of the computer world. To make sure that first-time owners can make their way through the book, the authors' first chapter contains the obligatory overview to telecommunications. Chapter 2 immediately plunges into the whys and wherefores of the Mac's unusual hardware configuration for serial (communications) processing, and by the time they've finished the chapter, readers should feel comfortable with the Mac's RS-422A standard for serial communications.

MacTelecommunications switches quickly from hardware to software in Chapter 3, where readers are presented with an overview of Apple's MacTerminal communications program. Although

Working From Home:
Everything You Need to Know About Living and Working Under the Same Roof

By Paul and Sarah Edwards
Jeremy P. Tarcher Inc., 1985
420 pages; $11.95 (softcover)
Reviewed by Cathryn Conroy

WORKING
FROM
HOME
EVERYTHING YOU NEED TO KNOW ABOUT LIVING AND WORKING UNDER THE SAME ROOF
• deciding whether working from home is for you
• setting up and operating an efficient home office
• handling family, friends, and neighbors
• solving problems of feeling isolated
• sticking to business and getting away from your work
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• finding and managing the right help
• dealing with zoning, licenses, and legal obligations
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• moonlighters and part timers
• direct sales representatives
• telecommuters and other computer-based workers
PAUL and SARAH EDWARDS

Working from Home is definitely required reading for all home-based entrepreneurs and telecommuters.

Working from home is indeed a dream come true for many — no more rush hours spent clogged in traffic snarls, no more strict organizational rules and regulations to follow, absolute control of one's work and working day. Yes, the benefits are many, but the pitfalls can be hazardous to your financial well being.

One way to avoid many of those pitfalls is to first read Paul and Sarah Edwards' excellent new book, *Working from Home*. The Edwardses, who serve as forum administrators of CompuServe's Working from Home Forum (GO HOM-146), have been working from home in separate businesses for the past decade. Recently, the husband-and-wife team joined forces and now spend their time as seminar leaders and speakers, promoting the numerous benefits of working from home.

In their latest book, the authors give concise, detailed information about the many advantages and problems commonly encountered in home businesses. The advice they offer, on such diverse topics as getting the best tax breaks to keeping a marriage together, is based on solid research as well as personal experience. In addition to drawing on their own experiences of the last 10 years, the Edwardses interviewed dozens of individuals who work at home and have creatively solved some of the little problems that can plague a home business.

Starting a business at home, setting up a home office, legal and insurance concerns, managing work at home, staying out of the refrigerator and even computerizing the home workplace are some of the topics dealt with in a thorough, entertaining way.

The chapter on selecting computer equipment is especially valuable for those who have yet to buy their first computer. Types of computers and dozens of computer terms are fully explained. Although there is no buying guide, reading this chapter will help the novice through the first — and often confusing — visit to the computer store.

In addition, several chapters specifically address the problem of staying in touch with the rest of the world. With no more chats by the water cooler and lunches in the corporate cafeteria with colleagues, it is easy to feel isolated and lonely. The authors offer creative solutions to networking with others, including electronical networking through various online databases.

This book is nothing short of absolutely necessary for the new work-at-homer, but old pros will benefit also. I have been working from home for more than three years, but still learned something new in each chapter. *Working from Home* is definitely required reading for all home-based entrepreneurs and telecommuters.

Cathryn Conroy is a contributing editor of Online Today. *Her User ID number is 70007,417.*

someone could (and has) written an entire book on that software alone, the authors have done a good job of familiarizing new users with the program.

The rest of this book is taken up with instructions on how to use the telecommunications capability that is written about in the first part. As is typical of books with this subject matter, information providers such as CompuServe are introduced as the most likely services for which users would have an interest. Other services are discussed though, and Mac users with West Coast addresses may find the explanation of Bank of America's "HomeBanking" service motivating enough to sign up.

Although the Macintosh's hardware may be different from what many owners have seen before, readers of *MacTelecommunications* will discover that many things change and stay the same.

James Moran is vice president of Programming Service Corp., a Midwestern consulting and research firm.

Options For Electronic Mail

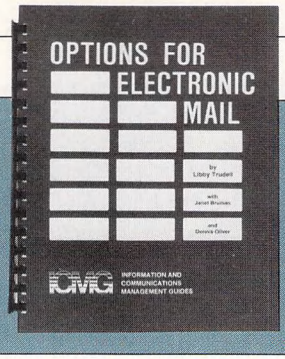
By Libby Trudell
Knowledge Industry Publications, 1984
171 pages; $24.95 (softcover),
$32.95 (hardcover)

Reviewed by William J. Lynott

It's now been almost a century and a half since Samuel Morse and his new telegraph machine tapped out the message, "What hath God wrought?" While a form of the telegraph machine is still in use for communications, electronic technology in the past few decades has spawned an incredible assortment of communications systems. *Options for Electronic Mail* will help to sort out the choices for business users and communications managers who must implement the most efficient forms of business communications for their companies.

This is not a book for the casual reader. It leans heavily toward historical analysis of communications technology and how each of the major choices can be applied to business situations. The book begins with an analysis of electronic mail service as it exists today. Statistical data and charts in this section do a good job of illustrating the mind-boggling numbers of messages that are exchanged every day in our society.

Using the gradual development of the telegraph and later the Telex and TWX communications networks as a foundation, *Options for Electronic Mail* leads the reader through the maze that ultimately brings us to computer-based message systems. The author has kept this part of the book from becoming tedious by wisely avoiding too much technical jargon. Simple line drawings also help to clarify the text.



If you are a professional or business person concerned with overall corporate communications you should find it of interest and value.

A separate chapter is devoted to helping the reader with the job of analyzing the communications needs of a business. Such considerations as message volume, traffic records and integration with other operations are included.

A chapter titled "The Hardware Alternatives" analyzes the principal hardware involved in commercial electronic mail. The differences between dedicated, stand-alone message processing hardware and attachable peripherals are discussed in considerable detail. This chapter also contains a great deal of hard information on specific products and vendors, price ranges and capabilities. A similar approach in the following chapter covers a selection of communications software. In keeping with the business orientation of the book, programs designed for use with such functions as electronic bulletin boards are not discussed.

In the final chapter, *Options for Electronic Mail* examines some of the electronic communications questions that are as yet unresolved. The possibility of a national electronic mail system similar to the United States Postal Service, the demise of the E-COM program, and the introduction of standards for facsimile transmission are all considered.

Options for Electronic Mail treats the subject from a more academic approach than is found in most of the popular books currently in the book stores. However, if you are a professional or business person concerned with overall corporate communications, you should find it of interest and value.

William J. Lynott is president of W.J. Lynott Associates, a management consulting firm in suburban Philadelphia, Pa. His CompuServe User ID number is 70007,420.

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The Yellow Book:

A Parent's Guide to Teacher-Tested Educational Software

By The National Education Association Educational Computer Service
Garland Publishing, 1985
95 pages; $12.95 (softcover)
Reviewed by Carole Houze Gerber

The introduction to this oversized paperback assures parents that "You can . . . choose 'NEA Teacher Certified' products with the confidence that they will perform as described in *The Yellow Book*." This NEA certification should mean a lot to parents — endorsement by this powerful national labor union for more than a million and a half teachers carries quite a wallop.

According to the NEA's Educational Computer Service division, to receive its "teacher-certified seal," software must be easy to use, technically reliable and instructionally sound. Of the hundreds of educational programs the NEA says were submitted for review, only about 300 met the criteria for inclusion in *The Yellow Book*. Included are very brief reviews of programs in most subject areas for preschool, elementary, secondary and postsecondary students as well as a sampling of authoring, word processing and other applications software. Each review is standardized to include system requirements, recommended target group, content and review comments.

The Yellow Book does a good job of weeding out bad programs — I didn't see a single piece of software listed that, to my knowledge, had been poorly reviewed elsewhere. In addition to Bank Street Writer, Story Machine and other programs that have become industry classics, *The Yellow Book* includes more obscure but equally excellent (according to their reviewers) programs such as Put Together, Take Away, an elementary math program by Milton Bradley and a three-program set by MCE Inc. for high schoolers called Job Survival Series. Mail order information is included for all programs.

In short, the good news about *The Yellow Book* is that it provides a fine service by filtering out the bad educational software on the market. The bad news is that the reviews are so short — many less than a dozen sentences long — that parents looking for in-depth information before plunking down their $39.95 (the average list price of the reviewed software) are urged to look elsewhere.

The good news — it filters out the bad educational software on the market. The bad news — the reviews are too short.

For example, a summary of comments on Songwriter by Scarborough Systems says basically that it's an effective tool for creating and saving a "pleasing musical piece" but that it may not be useful for more sophisticated music students. This may be enough information for a teacher with hundreds of dollars to spend on educational software, but only a very rich or a very foolish parent would invest in this expensive learning tool without knowing more about it. Songwriter, by the way, is an excellent program that includes on-screen prompts, a built-in Diatonic scale (the scale much of western music uses) and other exciting features. Like much of the other fine software included in *The Yellow Book*, it's worthy of a more comprehensive review.

Carole Houze Gerber is a contributing editor of Online Today. *Her book,* Turn Your Kid Into a Computer Genius, *was recently published by E.P. Dutton. She is currently working on a children's book about computer ethics for Franklin Watts Publishers. Her CompuServe User ID number is 70007,1215.*

IBM Portable Personal Computer User's Handbook

By Weber Systems Staff
Weber Systems Inc., 1984
$15.95 (softcover)
Reviewed by Annette Hinshaw

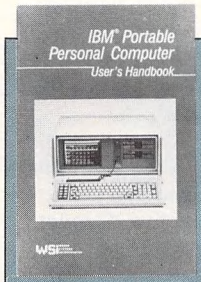
I recommend the *IBM Portable Personal Computer User's Handbook* for *all* IBM PC users. Although the title says "portable," most of the book's material is valuable for any PC model. This plain-English manual demystifies operating a disk-based computer system for all but the rawest newcomers, while covering enough ground to entice experienced users as well.

The book has three main parts — introduction, DOS operations and commands, and BASIC programming. The first few chapters explore setting up the IBM Portable, introducing the IBM keyboard and such basics as handling diskettes and using DOS. Explanations are simple, free of jargon and especially suited for beginners and those new to IBM.

But the text is more than simple. It includes a lot of information beyond the bare basics, including those invaluable odd bits of information needed to avoid problems (such as what to do when things don't work right and which functions can't be used together). The authors also write clear procedures that even inexperienced users should be able to follow. For instance, I have no hard-disk experience, but I am confident I could install DOS on a fixed disk using the instructions in this book.

Following this basic introduction, the book becomes more technical, but is always as clear and simple as the immediate subject permits. For example, the DOS Reference Guide is excellent and includes all commands in DOS 1.0, 1.1 and 2.0, with commands that are peculiar to one version specially marked. In addition, this section also covers the EDLIN, LINK and DEBUG utility programs. Although the authors designed it for programmers, I found the chapter much easier to understand than the IBM users' manuals.

The section on BASIC programming is also well done, covering all the keywords in BASIC 2.0, as well as the elements of file handling and graphics. And most of the explanations include brief program examples. Although the material is much too brief to teach the fine art of programming, it is a solid reference work for understanding BASIC.



This plain English manual demystifies operating a disk-based computer system.

As the title suggests, this book is a handbook. Although you won't want to read it from cover to cover, you will find it enormously useful material. I suggest carefully browsing through it to discover new facts about your IBM as well as enchancing your current PC knowledge. If you like knowing what makes computer operations work, or just want jargon-free explanations for using DOS, this book is a good investment.

Annette Hinshaw is a free-lance technical writer and trainer in Tulsa, Okla.

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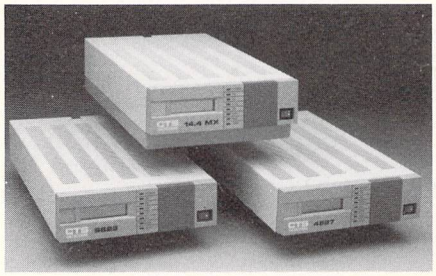

A New Companion

CTS Fabri-Tec Inc. has introduced three new modems — the CTS 4827, the CTS 9629 and the CTS 14.4MX Trellis Coded — to its Companion series of modems. All three offer automatic adaptive equalization, front panel programmability, liquid crystal status display and operation over unconditioned lines.

They are designed for four-wire, leased line, point-to-point or multiport applications. Serial data transmission ranges from 4,800 bits per second to 14,400 bits per second.

Prices range from $1,395 to $4,995. For information, contact CTS Datacomm, 6900 Shady Oak Rd., Eden Prairie, MN 55344; 612/941-9100.

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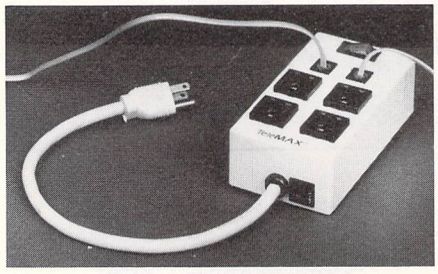


Surge Suppressor and Noise Filter

Telemax from Panamax is a low-cost telecommunication surge and spike suppressor and noise filter combination device.

Telemax, which retails for $129, eliminates power line, telephone line and telecommunication line disturbances that cause loss of data and component damage to solid state electronic equipment. Line protection is provided on the four AC receptacles and on the two RJ-45 RJ-11 compatible phone jacks.

For information, contact Panamax, 150 Mitchell Blvd., San Rafael, CA 94903; 800/472-5555 (nationwide) or 415/472-5547 (in California).

Circle 22 on the Reader Service card or GO EBB.

Action Pack Popcom Modems

Prentice Corp. has added two new models to its Action Pack series of Popcom modems, and both are bundled with the new advanced pfs:Access software package. The Popcom C150 internal card version sells for $469, and the Popcom X150 external model retails for $469.

Both modems allow transmission of information directly to a mainframe or to another personal computer. When transmitting from micro to micro, the Popcom can automatically handle voice and data switching on the same phone call. With pfs:Access software, either model can remember and automatically execute all dial-up and sign-on procedures, giving users easy access to online databases such as CompuServe.

For information, contact Prentice Corp., 266 Caspian Dr., P.O. Box 3544, Sunnyvale, CA 94088-3544; 408/734-9810.

Circle 23 on the Reader Service card or GO EBB.

Wireless Modem

The Esteem Model 84 wireless modem, introduced by Electronic Systems Technology Inc., allows the local area networking of up to 255 computers and peripherals without the use of cables.

Regardless of the serial port's transmission speed (from 50 to 19,200 baud) the Z80 microprocessor in the Esteem modem can facilitate communication between points on the network through its one-watt transmitter/receiver operating on narrow band FM VHF frequencies.

The unit sells for $995.95. For information, contact Electronic Systems Tehnology, 1031 N. Kellogg St., Kennewick, WA 99336; 509/735-9092.

Circle 24 on the Reader Service card or GO EBB.

Tandy Teleterm

The Teleterm Communications package from Telexpress Inc. is now available for the Tandy Model 16/6000 Xenix-based systems.

The Teleterm X supports a variety of modem types and even allows the user to define his own modem type. It operates in many networks, including CompuServe, as well as with most protocol converters to facilitate synchronous communications.

Other features include error-free disk-to-disk file transfer capabilities, support of XMODEM protocol, auto-dial and auto-answer and upload and download capabilities on any asynchronous system.

Teleterm X retails for $395. For information, contact Telexpress Inc., P.O. Box 217, Willingboro, NJ 08046.

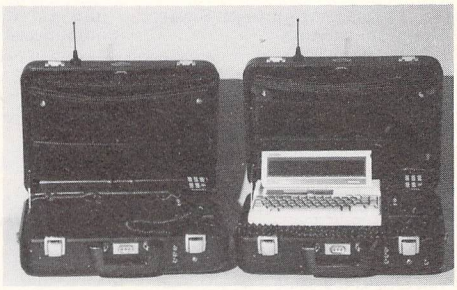
Circle 25 on the Reader Service card or GO EBB.

Never Far From the Office

Comm 88 has introduced The Portable Office, a fully portable, integrated data terminal and cellular telephone.

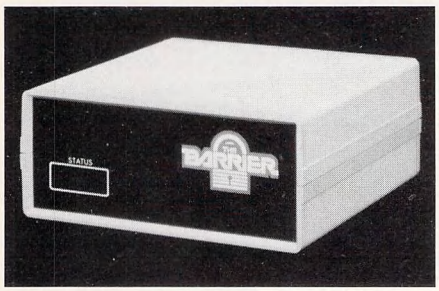
Enclosed in a 6- by 13- by 18-inch briefcase is a Motorola cellular telephone, Epson Geneva computer with flip-up 80-column screen, Motorola Datalink cellular modem, AC & DC rechargeable three-way power system and software for data communication, word processing, electronic spreadsheet and more.

Two-way data may be sent from the briefcase — with no connections to phone or power lines — in any city with a cellular telephone system. The Portable Office, which weighs 29 pounds, recharges in two hours, and shows battery status at a glance. Suggested retail price is $4,440.



For information, contact Comm 88, 3750 Texas Ave. S., Minneapolis, MN 55426; 612/720-2469.

Circle 26 on the Reader Service card or GO EBB.



Barrier Port Protection Device

The Barrier port protection device from International Anasazi Inc. limits access on dial-up lines when connected between a computer and modem. The unit is compatible with all computer systems and requires no additional hardware or software.

Its menu-driven operation offers the ability to operate at 2400 baud, as well as 300, 600 and 1200 baud. The data security device automatically drops the telephone line after three invalid password attempts and visually alerts the operator of an attempted break-in.

The Barrier retails for $369. For information, contact International Anasazi Inc., 2914 E. Katella Ave., Suite 202, Orange, CA 92667; 714/771-7250.

Circle 27 on the Reader Service card or GO EBB.

High-Speed Modem

The Penril Datacomm Datalinx 224 is a high-speed 2400 bits-per-second, full diagnostics and dual auto-dial modem.

It transmits over the Public Switched Telephone Network or over two-wire leased lines and provides fallback data rates of 120 and 300 bps. It includes a pattern generator and error detector and is capable of synchronous and asynchronous operation.

The modem is available in stand-alone or rack-mount configurations. For information, contact Penril DataComm, 207 Perry Parkway, Gaithersburg, MD 20877-2197; 301/921-8600.

Circle 28 on the Reader Service card or GO EBB.

Complexx Networking

Complexx Systems has introduced the Traverse Software System for computer/computer and computer/peripheral networking and communications.

The software provides networking utilities for local area networks as well as point-to-point or modem networks. Principal utilities involved include a multiple computer electronic mail system, file transfer to and from unattended computers, remote access and terminal emulation.

Network communications may be implemented in a variety of computer hierarchies. The software is available for UNIX (retailing for $795) and MS-DOS (selling for $295) systems, among others.

For information, contact Complexx Systems Inc., 4930 Research Dr., Huntsville, AL 35805; 205/830-4310.

Circle 29 on the Reader Service card or GO EBB.

A Quantum Leap

The Quantum series of high-speed, intelligent modems has been introduced by Symplex Communication Corp.

The series consists of the Quantum 14.4, the Quantum 9.6 and the Quantum DSU/CSU. Features of all three include increased line capacity, flexible multiplexing, automatic link intelligence, dynamic link speed control, leased line restoral and more.

Prices range from $6,200 to $7,450. For information, contact Symplex Communications Corp., 5 Research Dr., Ann Arbor, MI 48103; 313/995-1555.

Circle 30 on the Reader Service card or GO EBB.

Fast Modems

Universal Data Systems has introduced the new Fastalk line of modems bundled with Signon software.

The Fastalk 300 is a stand-alone 0-300 bits-per-second modem, the Fastalk 1200 is a stand-alone 0-300 and 1200 bits-per-second modem and the Fastalk 1200PC is a plug-in card 0-300 and 1200 bits-per-second modem for the IBM PC or compatible.

All are Hayes compatible and feature automatic dial and answer, automatic selection of pulse or tone dialing modes,

talk/data toggle, built-in audio speaker and true call progress detection. For information, contact Universal Data Systems, 5000 Bradford Dr., Huntsville, AL 35805-1953; 205/837-8100.

Circle 31 on the Reader Service card or GO EBB

Tandy 200 Portable

The Tandy 200, a lightweight, go-anywhere portable computer, is now available from Tandy Corp.

Features include a 40-column by 16-line liquid crystal display, 24K of user memory with two optional 24K memory banks, built-in telecommunications capability, enhanced built-in software including the spreadsheet Multiplan, battery operation, a full-sized typewriter-style keyboard and 24-hour alarm.

The internal, direct-connect, 300-baud modem with auto-dialing now features tone dialing in addition to pulse dialing. The Tandy 200, which weighs just 4.5 pounds, sells for $999. Additional memory banks retail for $249.95 each and the new carrying case sells for $39.95.

For information, contact your local Radio Shack Computer Center, Plus Computer Center and other participating dealers.

Circle 32 on the Reader Service card or GO EBB.

BBS Software

Micro-Systems Software Inc. is offering BBS-PC, electronic bulletin board software for the IBM PC, PC-XT, PCjr and compatibles. Among its features are electronic mail and program or data file exchanges.

It offers 16 different sections or subboards, four file transfer protocols and a terminal mode utility that supports a second modem, COM port and phone line to permit answering one modem and dialing out on the other.

BBS-PC retails for $249. For information, contact Micro-Systems Software Inc., 14301-18 Oak Circle, Boca Raton, FL 33431; 305/391-5077.

Circle 33 on the Reader Service card or GO EBB.

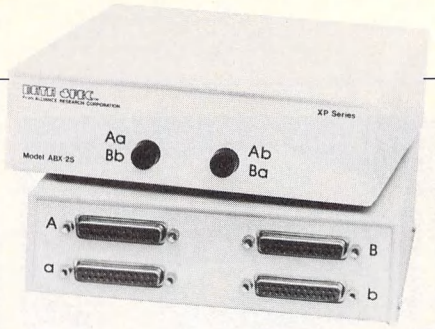
Trimline Combo

The Trimline Combo from Corvus Systems Inc. is a combination fixed disk drive and tape backup unit that provides IBM PC users with a fast method of storing and safeguarding information.

The unit provides 20MB of formatted disk storage and tape backup in either 45 or 60MB capacities. IBM PC users can quickly back up the complete disk or perform backup on a file basis. A directory of the backup files is provided at the beginning of every tape.

The Trimline Combo is priced at $3,295. For information, contact Corvus Systems Inc., 2100 Corvus Dr., San Jose, CA 95124; 408/559-7000.

Circle 34 on the Reader Service card or GO EBB.



Data Switch

Alliance Research Corp. has introduced the ABX25, a new product in the company's line of XP Series data switches.

The ABX25 is a 25-line "cross matrix" data switch designed to enable the alternate use of two computers with two peripherals, such as printers and modems.

For information, contact the Data Spec Division of Alliance Research Corp., 20120 Plummer St., P.O. Box 4029, Chatsworth, CA 91313; 818/993-1202.

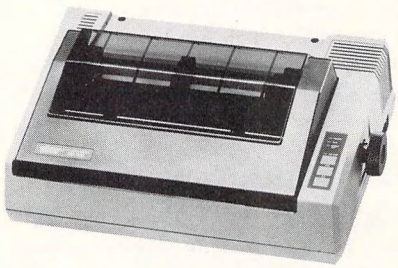
Circle 38 on the Reader Service card or GO EBB.

Commodore Printer

Star Micronics Inc. has introduced a Commodore detached dot-matrix printer with near-letter-quality printing.

Retailing at $129, the SG-10C printer features draft mode at 120 characters per second, near-letter-quality at 30 cps and both tractor and friction paper feed.

The unit is designed with a built-in Commodore interface, making it compatible with the Commodore 64, the VIC-20 and the new Commodore-128 computers.



For information, contact Star Micronics Inc., 200 Park Ave., New York, NY 10166.

Circle 35 on the Reader Service card or GO EBB.

Spectravideo Portable

The Bondwell 16 portable computer from Spectravideo features a 10MB hard disk drive, 128K RAM memory, a built-in voice synthesizer and bundled software.

Carrying a suggested retail price of $1,995, the Bondwell 16 Z80A microprocessor-based computer also features a 9-inch non-glare monitor, 91-key detached keyboard with a separate numeric keypad, a built-in modem and one 5¼-inch floppy disk drive.

The 30-pound computer is equipped with the upgraded CP/M 3.0 operating system and is bundled with WordStar, MailMerge, CalcStar, DataStar and ReportStar.

For information, contact Spectravideo Inc., 3300 Seldon Ct., No. 10, Freemont, CA 94539; 415/490-4300.

Circle 39 on the Reader Service card or GO EBB.

Database Management

R:base 5000 is a new database management system for microcomputers from Microrim Inc. Features include Application Express, extended programming capabilities and the Filegateway.

Application Express is a menu-driven utility that helps users develop their own database application concurrent with learning the program. Filegateway allows users to transfer data from popular programs, such as Lotus 1-2-3, pfs:file and dBase II into R:base file format.

For information, contact Microrim Inc., 3380 146th Pl. S.E., Bellevue, WA 98007; 206/641-6619.

Circle 36 on the Reader Service card or GO EBB.

Build a Bridge

Traveling Software has introduced the "One Box Solution" to bridge together many popular laptop portable and office desktop computers.

With each of the five Business Manager Series products, Traveling Software now includes laptop and desktop versions of the program, along with a new program called the Desktop/Laptop Bridge.

The Bridge joins different brands of laptop computers with MS-DOS desktop computers and provides a simple means of transferring data between them. Users get all three programs in one box and one disk for $99.95.

The Bridge runs on several desktop computers, including the Hewlett-Packard 150, the IBM PC and compatibles and on laptops such as the Hewlett-Packard 100, Data General/One, Texas Instruments Pro-Lite, Sharp PC-5000, Epson Geneva, Morrow Pivot, NEC PC-8201, Tandy Model 100 and others.

The Business Manager "One Box Solutions" include the Traveling Project Manager, Traveling Expense Manager, Traveling Appointment Manager, Traveling Sales Manager and Traveling Time Manager.

For information, contact Traveling Software Inc., 11050 Fifth Ave. N.E., Seattle, WA 98125; 206/367-8090.

Circle 37 on the Reader Service card or GO EBB.

ON-LINE PC goes PRIME-TIME TV!

At last! A TV Game Show comes to a PC Network!

New, on CompuServe, is "You Guessed It!". Match wits with new friends and old in hot contests to win valuable prizes. And here, with his personal invitation to YOU, is your polyester-plaid-clad game show host—
BOB ILLUMINATI!

"Is the "mike" on? It is?" RIGHT! Let's roll! ⟨flashing a size eleven smile⟩ "So, folks . . . why play "You Guessed It!"? Because, in addition to enjoying my sophisticated wit, good looks and charm, this game gives you the opportunity to . . ." ⟨clears throat and turns left profile to camera⟩

"enjoy the ***WACKED-OUT HUMOR*** of announcer Phil Vox and the rest of the "You Guessed It!" studio crew;

meet ***GROOVY GUYS AND GALS*** in 'round-the-clock team and individual play;

view games as a member of the ***PARTICIPATING AUDIENCE*** from the comfort of your home recliner;

accumulate points towards ***FABULOUS PRIZES*** to tantalize your friends and torment your enemies;

and make after-game mischief in the ***PLAYERS' LOUNGE*** with the regulars!"

⟨tripping over the microphone cord⟩ "Take it from 'ol Bob, folks! Don't sit before the tube riveted in envy watching someone else have all the fun and win all the prizes! Turn to your pc and make the game show experience your own! So remember, what's the first thing you're going to do the next time you "tune" into CompuServe?" "YOU GUESSED IT!" (Go YGI)

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YOU GUESSED IT!

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Online Collaboration In Public Programming

One of the satisfying things about hanging around the online communities over the past five years has been watching the growth of public programming.

Of course, it didn't begin with my generation of computer enthusiasts. Public domain software really had its start in the university computer labs in the 1950s and early '60s. That's when young technical wizards decided that a community approach was the best way to explore these new wonder-machines. A program developed by one explorer just naturally would be shared with all who wanted it. Someone else might pick it up, enhance it and contribute the refined version to the commonwealth. Software — and all other information about the machines, for that matter — belonged to everyone, they believed.

In the jargon of the day, these programming improvements were called "hacks" and populist programmers who did them, "hackers." While that poor word has gotten a black eye in recent years, the motivation behind it has flourished.

For instance, when computerists took to telecommunications in the 1970s, they brought with them their spirit of public programming. From the first, local bulletin board systems have offered an online staging area by which visitors can send and receive the programs that are the fruits of all this cooperation.

I didn't know any of this when I stumbled into the computing community in the early 1980s. Like many in my wave of immigrants, I was not so much interested in how computers worked as where they could take me through their communications potential. As such, many of us provided the first audience for all that good programming.

I think one of CompuServe's best contributions to consumer computing has been its putting a high priority on providing places where imaginative, original programming can be shared. Public Access and the data libraries of many of the forums have brought together, for the first time on a national scale, computer users and those who like to make the machines sing.

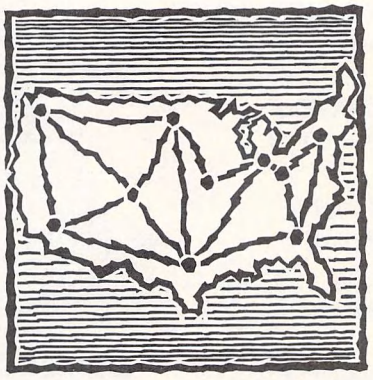
For instance, virtually any night on CompuServe, you can find forum messages from non-programmers who have run aground trying to use their sophisticated but complex computers. Check in a few hours later and you're likely to find that a programmer has volunteered to help. In other words, what for me might be a roadblock to what I need to accomplish is an opportunity for a programmer, a chance to learn more about his machine in the context of my problem.

In turn, if his solution is clever, it can inspire me to learn something new about computers and how to use them.

This sharing on a national scale has created a new kind of "folk process" to the electronic community. Like folk stories and folk arts that are enhanced as they pass from person to person, the public domain software is a legacy inherited by each generation that joins us online.

And this national stage is raising the quality of public programming itself by enabling software artists from all over the country to collaborate on some revolutionary projects.

The story on "AutoSig" is a grand example.



Gerhold/Smith

A few years ago a fellow named Howard Benner bought a TRS-80 Model 100 and became active in CompuServe's Model 100 Forum (PCS-154). Since that laptop portable computer, with its built-in modem and communications program, seemed born for traveling the electronic backroads, Benner and other forum members were anxious to push it to the limits. For instance, Benner thought it was a perfect vehicle for an idea he had for saving money on his CompuServe bills.

Benner wrote a program called SUPER.SIG, which let him do much of the reading and writing of forum messages offline. SUPER.SIG let the Model 100 automatically log on to CompuServe and handle a number of pre-selected chores, such as reading and posting messages.

When Benner placed his creation in the forum's data library, it was an immediate hit. New versions followed, incorporating refinements suggested by SUPER.SIG's enthusiastic followers.

Quickly, word of Benner's baby spread to neighboring forums, where resident wizards began thinking how they could create similar programs for other computer systems. Before long, a new incarnation of the program — now renamed "AutoSig" — was being born in the IBM PC Novice Forum (PCS-129).

These days — two years after Benner's first vision of an automatic forum program — three more programmers have joined the project: Vernon Buerg, Frank Lipschutz and Don Watkins. It has hundreds of dedicated users on the system and has even spawned a special "projects group" in the forum for development of other community programs.

As Watkins noted recently in the introduction to a new version of the program, AutoSig "is to my thinking a community hack in the true sense of the word — that is, lots of people contributing time and effort just for the sheer joy of programming. . . . It was an experiment in a group project where we didn't have any means of communications except through CompuServe. There were times when we got out of synch, but even with our diverse geographical locations it proved workable."

And, of course, AutoSig is just one example — hundreds of new public domain programs are coming online every month. The growth is so rapid that many of the traditional computer industry publications have not picked up on the phenomenon, so reviews of public domain software still are scarce. However, in those rare reviews, public programs often compare favorably with similar commercial products costing hundreds of dollars.

That has some observers concerned. They say that public domain software is just one more obstacle for the struggling commercial software industry.

Not at all. There have been enough recent success stories — Lotus Development Corp., Borland International, Microsoft — to demonstate that consumers still will support commercial programs if they are imaginative and innovative enough. It is only the old and over-priced ideas that are endangered.

Public programming promises to make us more self-sufficient consumers with tougher demands on the marketplace for quality, and that's in the truest spirit of personal computing.

Charles Bowen is a contributing editor from Huntington, W. Va. His CompuServe User ID number is 70007,411.

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CompuServe Consumer Information Service subscribers can request information electronically by entering GO EBB at any prompt.

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B. Interest in computer is for:
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C. Brand of personal computer interested in:
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4. ☐ Apple
5. ☐ Radio Shack
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7. ☐ Database management software
8. ☐ Integrated Software
9. ☐ Local Area Networks
10. ☐ Computer Books/Publications
11. ☐ Peripherals (specify) _____
12. ☐ Other (specify) _____

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4. ☐ $10,000-$19,999
5. ☐ $20,000-$49,999
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7. ☐ $100,000-or more

Circle inquiry number from this issue only.

1	21	41	61	81
2	22	42	62	82
3	23	43	63	83
4	24	44	64	84
5	25	45	65	85
6	26	46	66	86
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Now international fares are included for direct flight service between major North American cities and destinations throughout the world!

The OAG ELECTRONIC EDITION is an economical flight information system that electronically delivers current, accurate worldwide airline schedule and fare information to your office or home.

- Fares are listed from low to high so you can choose the least expensive fare at a glance. Schedules are listed in chronological order so you can choose the most convenient flight.
- There is no confusion since only fares that match your travel day, date, time and length of stay are displayed.
- Schedules and fares are linked so you can easily find the fare that corresponds to a schedule or vice versa.
- Easy to use even for someone not familiar with airline terminology!

OAG ELECTRONIC EDITION users tell us . . .

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Robert Frantz, MCI Telecommunications

"The accuracy of the fare information is wonderful. It's very up-to-date."
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"It gives us all the available information."
Allan Kocka, Gould Inc.

"Planning trips is easier and faster now."
Myrella Smith, University of Chicago

"It is a great convenience . . ."
Robert Yarnall. Yamaha International Corp.

". . . I've recommended it to several people I know."
William Preece, Dart & Kraft, Inc.

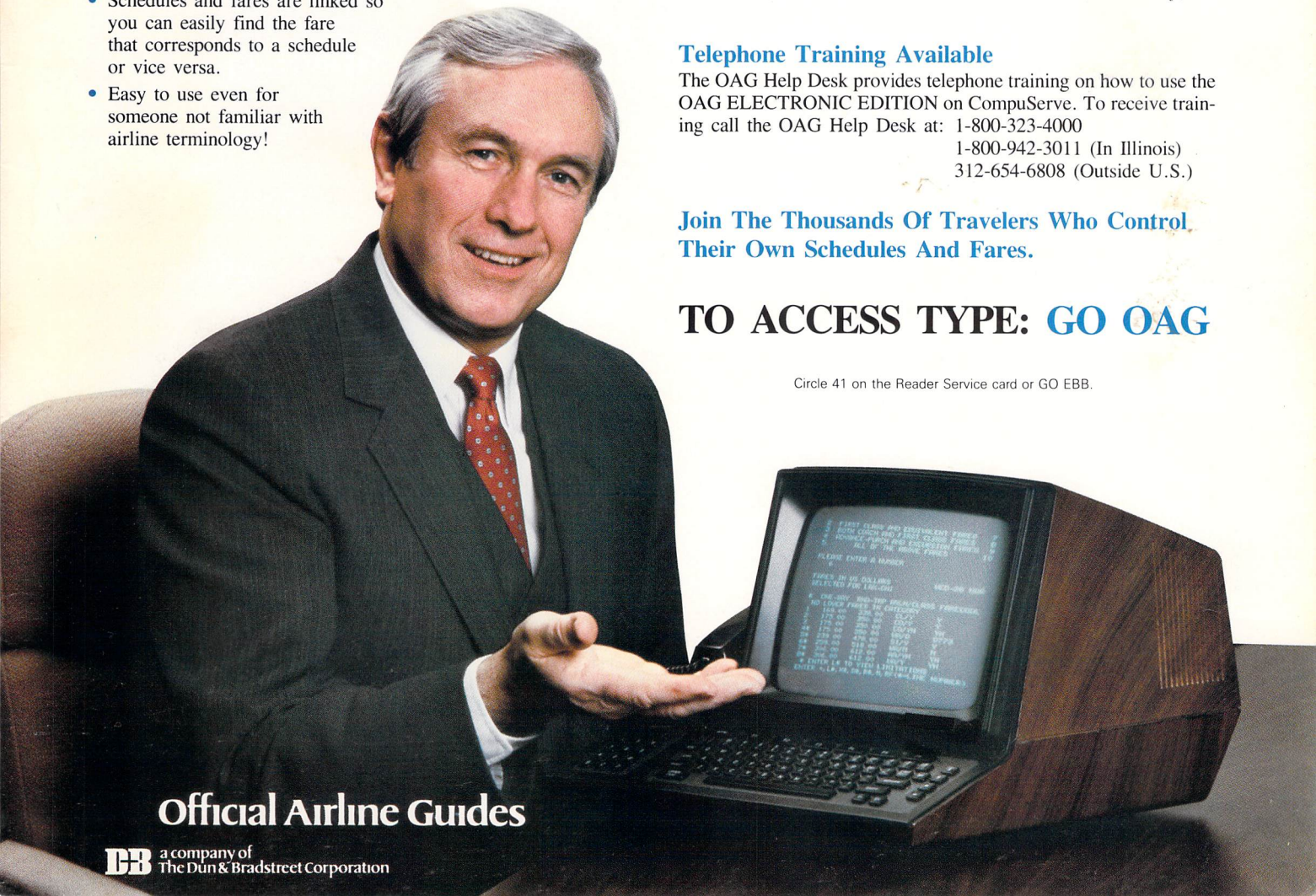
Telephone Training Available

The OAG Help Desk provides telephone training on how to use the OAG ELECTRONIC EDITION on CompuServe. To receive training call the OAG Help Desk at: 1-800-323-4000
1-800-942-3011 (In Illinois)
312-654-6808 (Outside U.S.)

Join The Thousands Of Travelers Who Control Their Own Schedules And Fares.

TO ACCESS TYPE: GO OAG

Circle 41 on the Reader Service card or GO EBB.



Official Airline Guides

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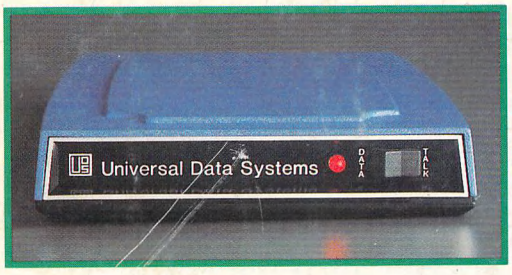
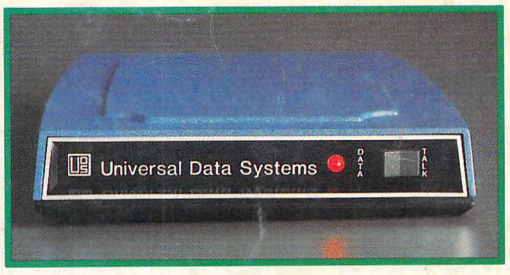
The Dun & Bradstreet Corporation

UDS UPDATE:

Bigger performance, smaller size for the 212 modem family





While the members of the UDS 300/1200 bps modem family have grown progressively smaller, the family itself has grown larger. The family now consists of:

• **The microprocessor-powered 212A.** It's a fully optioned, automatic-answer modem, but it's now packaged in the new 7″ × 9½″ × 2¼″ UDS "minibox." The full range of test capabilities is included.

• **The microprocessor-powered 212A/D.** Also packaged in the new minibox, its auto-dial storage capacity has been extended to 10 numbers. Screen-prompted auto log-on procedures can now be executed by the modem.

• **The line-powered 212 LPs.** These ultra-compact units are also 300/1200 bps. They draw their operating energy directly from the telephone circuit and need no external power source. The 212 LP is an originate/answer unit which requires manual answering; as an alternative, you may specify the 212A LP, a line-powered unit with auto-answer capability.

Check out the expanded family of UDS 212s — for technical details and attractive quantity discounts, contact Universal Data Systems, 5000 Bradford Drive, Huntsville, AL 35805. Telephone 205/837-8100; Telex 752602 UDS HTV.

QUANTITY ONE PRICES

212A	$495	212 LP	$295
212A/D	$545	212A LP	$345

Universal Data Systems

MOTOROLA INC.
Information Systems Group

Inquiry Hotline: 800/633-2252, Ext. 368.

Circle 42 on the Reader Service card or GO EBB.

UDS modems are offered nationally by leading distributors. Call the nearest UDS office for distributor listings in your area.

DISTRICT OFFICES: **Atlanta,** GA, 404/998-2715 • **Aurora,** CO, 303/368-9000 • **Blue Bell,** PA, 215/643-2336 • **Boston,** MA, 617/875-8868 • **Columbus,** OH, 614/895-3025 • **East Brunswick,** NJ, 201/238-1515 • **Glenview,** IL, 312/998-8180 • **Houston,** TX, 713/988-5506 • **Huntsville,** AL, 205/837-8100 • **Issaquah,** WA, 206/392-9600 • **Mesa,** AZ, 602/820-6611 • **Milwaukee,** WI, 414/273-8743 **Minnetonka,** MN, 612/938-9230 • **Mountain View,** CA, 415/969-3323 • **Richardson,** TX, 214/680-0002 • **St. Louis,** MO, 314/434-4919 • **Silver Spring,** MD, 301/942-8558 • **Tampa,** FL, 813/684-0615 **Thousand Oaks,** CA, 805/496-3777 • **Tustin,** CA, 714/669-8001 • **Willowdale,** Ont, Can, 416/495-0008 • **Ypsilanti,** MI, 313/483-2682

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